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West Sussex Transport Plan 2022 to 2036

Evidence Base Document

west sussex county council

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Contents

1. Introduction

1.1 This document sets out the evidence that has been used to help prepare the West Sussex Transport Plan 2022-36 (WSTP).

1.2 The document includes a review of the policies and strategies that set the context for the WSTP, before analysing data relevant to preparation of the WSTP. The analysis covers the main issues relating to the environment, economy, communities and the transport network that have influenced the WSTP. The analysis covers the main issues relating to the environment, economy, communities and the transport network that have influenced the WSTP. The document concludes by outlining a series of challenges that need to be addressed by the WSTP.

1.3 The data collation and analysis was conducted in late 2020 and reviewed again in late 2021/early 2022 so, in some cases, may not reflect the most up-to-date information at the date of publication. The County Council will continue to review data on these issues as the WSTP is implemented.

2. Policy and Strategy Context

2.1 Policies and strategies are relevant to the WSTP because they set out the objectives for the Government and other strategic partners and guide their decision-making. In order to be successful in influencing others to address West Sussex challenges and help to deliver the WSTP, the County Council should align the WSTP to these objectives. The main policies and strategies that have influenced this Plan are at the national, regional and local level and are listed in the following sections under these levels, and then where applicable, in the order of environment, community, economy and transport-related policies and strategies.

National

DEFRA: A GREEN FUTURE: OUR 25 YEAR PLAN TO IMPROVE THE ENVIRONMENT 2018

2.2 In 2018, the Department for Environment Food and Rural Affairs (DEFRA) established the 25-year Environmental Plan[1] which aims to help the natural world regain and retain good health. The Plan aims to deliver cleaner air and water in cities and rural landscapes, the overall protection of biodiversity and habitats; through a comprehensive plan that puts the environment first. This is relevant to the Transport Plan because the Government's goals and key principles for managing pressure on the environment should influence the way the transport network is managed and improved so that it contributes to these goals.

DFT: TRANSPORT DECARBONISATION PLAN 2021

2.3 This document sets out the Government's plan and commitments to achieve the legally binding target to achieve net zero carbon emissions

[1] HM Government: A Green Future: Our 25 Year Plan to Improve the Environment (2018)

by 2050. The Transport Decarbonisation Plan (TDP)[2] sets out the Government's commitments and actions for each mode of transport. It does not address issues such as power generation which are covered in other strategies. The TDP acknowledges that some matters such as international shipping and aviation will also require international cooperation.

2.4 The Government's strategic priorities are (those most relevant to the County Council are in italics):

1. *Accelerating modal shift to public and active transport;*
2. *Decarbonising road transport;*
3. *Decarbonising how we get our goods;*
4. Making the UK a hub for green transport technology and innovation;
5. *Place-based solutions to emissions reduction;* and
6. Reducing carbon in a global economy.

HM GOVERNMENT: THE CLIMATE CHANGE ACT 2008 (2050 TARGET AMENDMENT) ORDER 2019

2.5 In 2019, the Government committed to a legally binding target of net zero emissions (i.e. any emissions will be offset by schemes such as tree planting to offset an equivalent amount) of all greenhouse gases by 2050[3]. Transport is now the largest contributor to UK domestic greenhouse gas emissions. Transport contributed 27% of UK domestic emissions in 2019, and there has been little change over time in domestic transport emissions, either by mode or across the sector. Although there has been a 44% overall reduction in UK domestic greenhouse gas emissions since 1990, domestic transport emissions have only fallen by 5% in this period[4].

HM GOVERNMENT: UK CLIMATE CHANGE RISK ASSESSMENT 2022

2.6 As required by the Climate Change Act 2008, the Government has undertaken the third five-year assessment of the risks of climate change on the UK. This is based on the Independent Assessment of UK Climate Risk, the statutory advice provided by the Climate Change Committee (CCC), commissioned by the Government. The risk assessment considers sixty-one UK-wide climate risks and opportunities cutting across multiple sectors of the economy. This prioritises habitats, soil health, natural carbon stores, risk to food supplies, climate related issues on power systems and infrastructure and risks to human health, wellbeing and productivity from climatic change[5]. This is relevant to the Transport Plan because climate change is one of the key challenges.

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[2] DfT: Decarbonising Transport: A Better, Greener Britain (2021)

[3] HM Government: The Climate Change Act 2008 (updated in 2019 to match 2050 net zero commitments

[4] DfT: Transport and Environmental Statistics 2021 Annual report (2021)

[5] HM Government: UK Climate Change Risk Assessment (2022)

DEFRA: CLEAN AIR STRATEGY 2019

2.7 In 2019, the Government published the Clean Air Strategy[6], which shows how they will tackle all sources of air pollution, making the air healthier to breathe, protecting nature and boosting the economy. This Clean Air Strategy sets out the case for action and demonstrates the Government's aim to improve air quality. As road transport is one of main sources of air pollution, the strategy seeks to address this issue by incentivising the use of clean fuels and investing in new technology.

DEFRA: NOISE ACTION PLAN: ROADS 2019

2.8 The Noise Action Plan: Roads[7] outlines how the Environmental Noise (England) Regulations 2006 will be implemented in England. The Action Plan applies to noise from road sources that were covered by the third round of strategic noise mapping undertaken during 2017. It accompanies two additional Action Plans, published at the same time, covering the management of noise within agglomerations (which includes some parts of West Sussex) and from rail sources. Responsibility for preparing airport action plans rests with the relevant airport operators. The Noise Action Plan is relevant to the Transport Plan as it identifies Noise Important Areas (NIAs) in West Sussex.

BEIS: THE CLEAN GROWTH STRATEGY - LEADING THE WAY TO A LOW CARBON FUTURE 2017

2.9 In October 2017, the Department for Business, Energy and Industrial Strategy published The Clean Growth Strategy[8]. This sets out the key actions that the Government will take to support clean growth including to meet its legal requirements under the Climate Change Act. This includes actions under the theme of accelerating the shift to low carbon transport including:

- Ending the sale of new conventional petrol and diesel cars and vans by 2040 (the Government has since announced that it will bring this forward to 2030, although some hybrid cars and vans will remain on sale until 2035[9]);
- Supporting the costs of uptake of ultra-low emission vehicles (ULEV);
- Investing in the electric vehicle charging networks;
- Accelerating the uptake of low emission taxis and buses;
- Ensuring the public sector leads the way in transitioning to zero emission vehicles;
- Supporting the automotive industry transition to zero emission vehicles;

[6] DEFRA: Clean Air Strategy (2019)

[7] DEFRA: Noise Action Plan: Roads (2019)

[8] HM Government: The Clean Growth Strategy (2017)

[9] HM Government: The Ten Point Plan for a Green Industrial Revolution (2020)

- Investing in cycling and walking to make this the natural choice for shorter journeys;
- Supporting the shift in freight from road to rail; and
- Investing in innovation and research.

2.10 These Clean Growth Strategy key actions set the focus for Government investment in Clean Growth transport interventions and should influence decisions about transport network investment priorities in West Sussex.

HM GOVERNMENT: CHILDHOOD OBESITY A PLAN FOR ACTION CHAPTER 2 2018

2.11 The Childhood Obesity Plan[10] outlines the actions the Government will take towards its goal of halving childhood obesity and reducing the gap in obesity between children from the most and least deprived areas by 2030. The Plan states that it needs to do this because childhood obesity is one of the biggest health problems this country faces - with childhood obesity rates in the UK now ranked amongst the worst in Western Europe.

2.12 The document states that local authorities have a range of powers and opportunities to create healthier environments. They have the power to develop planning policies to limit the opening of additional fast food outlets close to schools and in areas of over-concentration; prioritise active travel in transport plans and deliver walking and cycling infrastructure through Local Cycling and Walking Infrastructure Plans, and; ensure access to quality green space to promote physical activity. Local authorities can also offer professional training, parenting support, social marketing campaigns and weight management services. They can partner with leisure and sport facilities to offer accessible physical activity opportunities. The plan says as well as encouraging children to be active while in school, travel to and from school can also be used as an opportunity to increase children's physical activity levels. This is relevant to the Transport Plan because it should influence decisions about how to manage and improve the transport network.

DHSC: PREVENTION IS BETTER THAN CURE 2018

2.13 This document[11] sets out the Government's vision for stopping health problems from arising in the first place and supporting people to manage their health problems when they do arise. The nation faces significant challenges in the future: rising levels of obesity, mental illness, age-related conditions like dementia, and a growing, ageing and diversifying population, often living with multiple, long-term conditions such as diabetes, asthma and arthritis. The document goes on to discuss encourages active travel due to the benefits to mental and physical health. The document continues to discuss how to improve the safety (and perceived safety) of cycling and walking. This is relevant to the Transport Plan because it should influence decisions about how to manage and improve the transport network.

[10] HM Government: Childhood obesity: A plan for action Chapter 2 (2018)

[11] DHSC: Prevention is better than cure (2018)

DFT: TRANSPORT INVESTMENT STRATEGY 2017

2.14 In July 2017, DfT published a Transport Investment Strategy (TIS)[12] setting out four main objectives which DfT investment decisions should focus on and should be taken into account in setting the vision and objectives of the Transport Plan:

- Creating a transport network that works for users wherever they live by providing a network that is reliable, well-managed and safe;
- Improving productivity and rebalancing growth across the UK;
- Enhancing global competitiveness by making Britain a more attractive place to invest; and
- Supporting the creation of new housing.

DFT: CYCLING & WALKING INVESTMENT STRATEGY 2017

2.15 The Infrastructure Act 2015 introduced a duty on the Secretary of State for Transport to bring forward a Cycling and Walking Investment Strategy (CWIS)[13] in England that must specify objectives to be achieved and financial resources available. The Government's long-term ambition is to make cycling and walking the natural choices for shorter journeys or as part of a longer journey by 2040. The Government's aims and targets to be achieved by 2025 are to:

- Double cycling (measured in terms of cycle stages per year) from 0.8 billion stages in 2013 to 1.6 billion stages in 2025;
- Increase walking activity (measured in terms of walking stages per person per year) to 300 stages per person per year; and
- Increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025.

2.16 The first CWIS covered the period 2016/17-18/19 and has resulted in the preparation of Local Cycling & Walking Infrastructure Plans (LCWIPs) which have developed networks of proposed cycle and walking infrastructure for some areas that can form the basis for long term infrastructure planning and investment. The CWIS has also led to the development of a Propensity to Cycle Tool that provides objective information about where there is greatest propensity for cycling and walking in future years. This is relevant to the Transport Plan as this is likely to be an area of opportunity to secure future funding.

DFT: GEAR CHANGE: CYCLING & WALKING PLAN FOR ENGLAND 2020

2.17 In July 2020, the DfT published a Cycling & Walking Plan for England entitled 'Gear Change: A bold vision for cycling and walking'[14]. The Plan sets out how the Government intends to invest £2bn of new funding for cycling and walking over the next five years largely directed through local authorities. The main focus will be on medium sized towns, larger

[12] DfT: Transport Investment Strategy (2017)

[13] DfT: Cycling and Walking Investment Strategy (2017)

[14] DfT: Gear Change: A Bold vision for cycling and walking (2020)

towns and cities. The Plan introduced new infrastructure design guidance (Local Transport Note 1/20) and proposed the establishment of a new body; Active Travel England (ATE), that will led by a new national cycling and walking commissioner. ATE will be charged with raising standards and will assess Local Authority performance on active travel and influence the funding received for other forms of transport. This is relevant to the Transport Plan as this is likely to be an area of opportunity to secure future funding and will influence the design of new and improved cycle infrastructure.

DFT: FUTURE OF MOBILITY: URBAN STRATEGY 2019

2.18 In 2019, the DfT published its Future of Mobility: Urban Strategy[15] setting out what the Government considers to be opportunities created by advances in science and technology that are leading to cleaner transport, automation, new business models and new modes of travel. These opportunities have the potential to transform how people, goods and services move. New mobility services that may be relevant to the WSTP review include demand responsive transport (e.g. dial-a-ride), dynamic demand responsive transport (i.e. demand responsive transport with dynamically adjusted routes), micro-mobility (e.g. e-scooters), Mobility as a Service (MaaS) (i.e. purchasing various mobility services as part of a package) and shared-mobility (e.g. car/bike-sharing).

2.19 The Strategy sets out a vision of urban transport based on a set of principles that are intended to guide innovation, regulatory frameworks, decision-making and the development of technology and urban areas. These are intended to avoid the social, environmental and economic risks that could materialise from a passive approach to new mobility solutions.

2.20 DfT are also expected to publish a Future of Mobility: Rural Strategy in the near future that may also be relevant to the WSTP, either during its development or implementation stage.

HM GOVERNMENT: NET ZERO STRATEGY: BUILD BACK GREENER 2021

2.21 This strategy[16] sets out the Government's commitments to end the sale of new petrol and diesel cars, by 2030 and ensure that all new cars are fully zero emissions capable by 2035. There will be further funding for zero emission vehicle grants and EV Infrastructure, with a focus on local on-street residential vehicle charging. Road freight trials will be expanded to assess benefits and infrastructure requirements. The strategy commits to investment in new zero emission buses and the infrastructure to support them. This is relevant to the Transport Plan as this is likely to be an area of opportunity to secure future funding.

2.22 The strategy sets out key aims for investment to help enable:

- Half of journeys in towns and cities to be cycled or walked by 2030;

[15] DfT: Future of Mobility: Urban Strategy (2019)

[16] HM Government: Net Zero Strategy: Build Back Better (2021)

- Integrated bus networks with more frequent services and bus lanes to speed journeys;
- 4,000 new zero emission buses and the infrastructure to support them, and a net zero rail network by 2050, with the ambition to remove all diesel-only trains by 2040;
- Ending the sale of new petrol and diesel cars by 2030 and ensure all new cars are fully zero emission capable by 2035; and
- The electrification of all UK vehicles and their supply chains, including through further zero emission road freight trials.

HM GOVERNMENT: ROAD TO ZERO STRATEGY 2018

2.23 Road to Zero[17] is the Government's strategy for ultra-low emission vehicles. It set out how they intended to meet their commitment that the majority of new cars and vans sold will be 100% zero emission and all new car and vans would have significant zero emission capability by 2040. The Strategy also states the Government's ambition is that by 2050 almost every car and van will be zero emission.

2.24 In November 2020[18], the Government announced plans to accelerate the transition to cleaner vehicles in two stages; step 1 involves bringing forward the phase out date for the sale of new petrol and diesel cars and vans to 2030; step 2 is that all new car and vans will be fully zero emission at the tailpipe from 2035. This is relevant to the Transport Plan as this is likely to be an area of opportunity to secure future funding.

MHCLG: NATIONAL PLANNING POLICY FRAMEWORK 2019

2.25 The revised National Planning Policy Framework (NPPF)[19], published in February 2019, sets out the Government's high-level objectives for the planning system for England. It describes the Government's planning policies and how these are expected to be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. At the heart of the NPPF is a presumption in favour of sustainable development, that is, development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The planning system is built around the three pillars of sustainable development: economic, social and environmental.

DFT: NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS 2014

2.26 The National Policy Statement for National Networks (NPSNN)[20] sets out the Government's priorities for infrastructure projects on the national road and rail networks including motorways, trunk roads and railways in West Sussex. The NPSNN identifies existing pressures on the transport

[17] HM Government: The Road to Zero (2018)

[18] HM Government: The Ten Point Plan for a Green Industrial Revolution (2020)

[19] MHCLG: National Planning Policy Framework (2019)

[20] DfT: National Policy Statement for National Networks (2014)

network, which are expected to increase as the economy and population grows. It estimated that road traffic will increase by 30% and rail journeys will increase by 40% by 2030. It describes how the Government plans to tackle the challenges presented by growth by ensuring national road and rail networks support a competitive economy and high quality of life. The key objectives described in the NPSNN are to deliver national networks that:

- Have the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs;
- Support and improve journey quality, reliability and safety;
- Support the delivery of environmental goals and the move to a low carbon economy; and
- Join up communities and link them effectively to each other.

DFT: NATIONAL POLICY STATEMENT FOR PORTS 2012

2.27 The National Policy Statement for Ports (NPSP)[21] provides a framework for decisions on proposals specifically for new port development. The NPSP describes the essential role ports play as international gateways in the UK, and how they support many forms of economic and social activity. These activities include freight and bulk movements; the import and export of energy supplies; tourism and leisure; and wider economic benefits such as job creation. The NPSP describes an overarching objective to promote sustainable port development that caters for long-term forecast growth in imports and exports and contributes to long-term economic growth. This may be relevant to the Transport Plan as there are ports in West Sussex.

DFT: NATIONAL POLICY STATEMENT FOR AIRPORTS 2018

2.28 The National Policy Statement for Airports (NPSA)[22] describes the important role the aviation sector plays in supporting sectors of the economy such as business and financial services and the creative industry. The NPSA sets out the need for additional airport capacity in the South East, noting that Gatwick Airport – the busiest single runway airport – is approaching maximum capacity. By the mid-2030s, all major airports in the South East are expected to be operating at capacity, which could place the UK's status as a major international hub at risk. However, it should be noted that these forecasts were produced prior to the COVID-19 pandemic so may now be considered out-of-date.

DFT: INCLUSIVE TRANSPORT STRATEGY 2018

2.29 This strategy[23] sets out the Government's plans to make the transport system more inclusive, and to make travel easier for disabled people. While it is focused on the inclusion of disabled people, many of the improvements will also benefit other users of the transport system.

[21] DfT: National Policy Statement for Ports (2012)

[22] DfT: Airports National Policy Statement (2018)

[23] DfT: Inclusive Transport Strategy (2018)

There are a number of aspects of the transport network that require improvements. For example, much of our rail infrastructure was built in the Victorian era when the needs of disabled people were simply not considered in the same way as they are today.

2.30 The strategy is based on five main themes: awareness of passenger rights and enforcement; better staff training (i.e. to ensure that transport staff have greater understanding of the needs of disabled passengers and their legal rights); improved information; inclusive physical infrastructure (i.e. taking steps to ensure that vehicles, stations and streetscapes are designed and built so they are inclusive and easy to use), and; planning the future of inclusive transport (i.e. ensuring that new technologies and future transport systems are designed from the outset with disabled people in mind). This is relevant to the Transport Plan because it should influence decisions about how to manage and improve the transport network.

HM GOVERNMENT: NATIONAL DISABILITY STRATEGY 2021

2.31 This strategy[24] sets out the actions the Government will take to improve the everyday lives of disabled people. Under the transport sections, the strategy discusses improving the accessibility and experience of everyday journeys. It notes that everyday journeys, be they to work, school, to see family and friends, to access essential services like health and care or other, are fraught with uncertainty for many disabled people.

2.32 The strategy sets out the further steps it will take to:

- tackle persistent accessibility issues across the transport network, including on rail, buses, taxis and roads; and
- enable disabled people to travel with confidence by addressing staff training, information and the attitudes and behaviours of others.

2.33 These steps fall under the following themes:

- Transforming the accessibility of the railway station network;
- Improving disabled people's experience of travelling by train;
- Improving the accessibility of buses, bus stations and bus stops;
- Tackling shortages in community transport drivers;
- Improving the accessibility of taxis and private hire vehicles;
- Making 'lifeline' ports more accessible for disabled passengers;
- Creating accessibility standards for electric vehicles charge points;
- Improving the Blue Badge scheme; and
- Tackling pavement parking.

2.34 Furthermore, the strategy states that transport infrastructure (access to toilets, passenger information, signage) is as important as access to transport vehicles. In addition, streetscapes can present problems, including kerb issues, street furniture and pop-up infrastructure. This is

[24] HM Government: National Disability Strategy (2021)

relevant to the Transport Plan because new and improved infrastructure and services should take these issues into account and ensure that the needs of disabled people, including those with disabilities that are not visible, are given due consideration in the development of transport interventions.

2.35 In addition to the National Disability Strategy the Government has also published the refreshed national strategy for improving the lives of autistic people and their families and carers in England[25]. The strategy lists the following key transport specific commitments in the first year of the strategy:

- continuing to promote a disability equality training package for transport operators; and
- resuming the 'it's everyone's journey' campaign to create a more inclusive and supportive public transport environment for disabled people.

DFT: BUS BACK BETTER: NATIONAL BUS STRATEGY FOR ENGLAND 2021

2.36 This is the first national strategy for buses[26]. The National Bus Strategy sets out the ambition to grow bus usage back to what it was before the COVID-19 pandemic. In addition, the Strategy sets out how to increase patronage and raise bus mode share even further than these previous levels. The strategy aims to achieve this by ensuring that buses are an attractive alternative to the car for far more people.

2.37 The Strategy set out an expectation that by the end of June 2021, Local Transport Authorities would commit to establishing Enhanced Partnerships across their entire area under the Bus Services Act, and all operators would co-operate throughout the process. By the end of October 2021, Local Transport Authorities were expected to publish a local Bus Service Improvement Plan, detailing proposals to improve services.

DEFRA: THE ENVIRONMENT ACT 2021

2.38 The UK Environment Act 2021[27] sets out legislation that will protect and enhance the environment in the future. The Act includes provisions for tackling air pollution, restoring natural habitats, increasing biodiversity, reducing waste and making better use of resources. Changes will be driven by a new legally binding environmental targets, and enforced by a new, independent Office for Environmental Protection (OEP) which will hold government and public bodies to account on their environmental obligations.

2.39 This wide-ranging legislation is newly enacted and will mandate 10% biodiversity net gain on all developments that require planning

[25] HM Government: The national strategy for autistic children, young people and adults: 2021 to 2026 (2021)

[26] DfT: Bus Back Better: National bus strategy for England (2021)

[27] HM Government: 'World-leading Environmental Act becomes law' press release (November 2021)

permission. It also amends other legislation (Natural Environment and Rural Communities Act 2006 s40) obliging other transport projects to consider impacts on biodiversity and to seek to provide enhancement.

2.40 The Act includes the establishment of Local Nature Recovery Strategies, which form a new system of spatial strategies. They are designed as tools to drive more coordinated, practical and focussed action to help nature and they will cover the whole of England.

2.41 With respect to air pollution the Government is also expected to set a target for ambient PM2.5 concentrations (Particulate Matter less than 2.5 micrometres in diameter), the most harmful pollutant to human health. This is relevant to the Transport Plan as road transport remains a significant source of PM emissions (13% of PM2.5 and 12% of PM10 in 2020) with non-exhaust road emissions (e.g. brake, tyre and road wear) representing 10% of PM emissions in 2020[28]. The act also includes an enhanced role for local authorities to tackle air pollution problems, including county councils for areas in England for which there are district and borough councils.

Regional

GATWICK 360° THE COAST TO CAPITAL STRATEGIC ECONOMIC PLAN 2018-2030

2.42 The Coast to Capital area is a network of functional economic hubs stretching from Croydon to Greater Brighton and including parts of East Surrey and the whole of West Sussex. The Coast to Capital Local Enterprise Partnership (LEP) published its second Strategic Economic Plan[29] in 2018 with eight economic priorities to achieve the vision of becoming the most dynamic non-city region in England:

- Priority 1 - Deliver Prosperous Urban Centres
- Priority 2 - Develop Business Infrastructure and Support
- Priority 3 - Invest in Sustainable Growth
- Priority 4 - Create Skills for The Future
- Priority 5 - Pioneer Innovation in Core Strengths
- Priority 6 - Promote Better Transport and Mobility
- Priority 7 - Improve Digital Network Capability
- Priority 8 - Build a Strong National and International Identity

2.43 It has been expected that the Coast to Capital LEP will lead the preparation of a Local Industrial Strategy for the LEP area. Local industrial strategies are intended to promote the coordination of local

[28] Other significant sources of PM emissions are combustion in the manufacturing and construction sector (27% of PM2.5 and 16% of PM10), industrial combustion and processes (14% of PM2.5 and 34% of PM10) and domestic combustion such as from burning wood (25% of PM2.5 and 15% of PM10); DEFRA: Emissions of air pollutants in the UK – Particulate matter (PM10 and PM2.5) National Statistics (2022)

[29] Coast to Capital: Gatwick 360° Strategic Economic Plan 2018-2030 (2018)

economic policy and national funding streams and establish new ways of working between national and local government, and the public and private sectors. The Economic Plan includes priorities and a series of actions in relation to the Local Industrial Strategy, which include actions covering the following areas:

- Supporting the establishment of Transport for the South East as a Sub-national Transport Body to bring further funds to roads and railways across the area;
- Supporting the growth of Gatwick Airport within its existing footprint;
- Leading lobbying for investment in a state-of-the-art digital railway through investment in the Brighton Main Line and Crossrail 2;
- Prioritising investment in a new standard of full fibre broadband connectivity between economic hubs;
- Leading efforts for a wider roll-out of 5G technology and working with mobile providers to ensure they identify 'not-spots' and to prioritise full coverage; and
- Prioritising the development of a strategy for low emission vehicles.

2.44 Work by the Coast to Capital LEP to develop the Local Industrial Strategy was paused in 2020 to enable a focus on responding to the COVID-19 pandemic.

COAST TO CAPITAL: BUILD BACK STRONGER, SMARTER AND GREENER 2020

2.45 In 2020 the LEP also published a Build Back Stronger Smarter and Greener Plan to support recovery from the COVID-19 pandemic, partially through strategic investments in the transport network.

2.46 This Build Back Stronger, Smarter and Greener Plan[30] aims to build back a stronger economy by supporting Crawley with a plan to grow and evolve the UK's most COVID-19 impacted town. To build back smarter, the plan aims to build upon the knowledge and innovation community which already exists in Brighton. To build back greener, the plan aims to lead a green recovery across the whole region. The plan states a two-pronged approach to working towards UK 'net-zero' targets on climate change: decarbonising the energy supply across homes, transport and industry, while securing and coordinating investment in natural capital to offset emissions.

TRANSPORT FOR THE SOUTH EAST: TRANSPORT STRATEGY 2020-2050

2.47 Transport for the South East (TfSE) is comprised of West Sussex, East Sussex, Kent, Surrey, Hampshire, Brighton and Hove, Southampton, Portsmouth, Isle of Wight, Berkshire Local Transport Body and Medway. The Partnership Board is currently operating as a shadow body and has submitted a Proposal to Government seeking statutory status.

[30] Coast to Capital: Build back stronger, smarter and greener (2020)

2.48 TfSE has developed a vision and Transport Strategy[31] that aims to shape the South East as a region economically, technologically and environmentally over the next 30 years, whilst changing the way transport investment takes place. It addresses issues such as connectivity, reliability, collaboration, 'smart' technology, health and well-being, air quality, accessibility, safety, carbon and climate change, and other environmental impacts.

2.49 TfSE's key principles, in effect, the strategic objectives that they are seeking to achieve through the strategy, are:

- Supporting economic growth, but not at any cost;
- Achieving environmental sustainability;
- Planning for successful places;
- Putting the user at the heart of the transport system; and
- Planning regionally for the short, medium and long term.

TRANSPORT FOR THE SOUTH EAST: FUTURE MOBILITY STRATEGY JULY 2021

2.50 The strategy[32] sets out how the South East of England will become a global leader in sustainable mobility over the period to 2035. This includes accelerating the move to net zero.

2.51 The strategy includes the following objectives:

- Future mobility will play a central role in helping decarbonise the transport ecosystem through the provision of electromobility modes and services to help reduce dependency upon the sole occupancy, private car irrespective of propulsion type.
- Active travel will be the first choice for local journeys, for those who are able, supporting better air quality and the improved wellbeing of communities.
- Zero emission mass transit will be at the centre of the mobility ecosystem, reducing car dependency and ownership.
- The connectivity, capacity, efficiency, reliability and resilience of the mobility ecosystem will be optimised, making best use of existing assets and investments in services and infrastructure.
- Future mobility will be integrated with the established passenger and freight/logistics transportation networks, delivering safe, seamless journeys and making planning, using and paying for mobility simpler and easier.
- Future mobility will be integrated with spatial and economic planning, making high quality people-focused places, securing funding, supporting investment in the region's economy and targeting investment where it is needed most.

[31] TfSE: Transport Strategy for the South East (2020)

[32] TfSE: Future Mobility Strategy (2021)

TRANSPORT FOR THE SOUTH-EAST: FREIGHT STRATEGY 2022

2.52 The TfSE Freight Strategy takes a vision-led approach towards safe, sustainable and efficient movement of goods in the future which puts people and places at the heart of all recommendations, not vehicles. The strategy will support sustainable economic growth, with significantly reduced impacts on communities and the environment. The main points from the strategy that are relevant to the Transport Plan are summarised as:

- Enhancements to the rail network, both in terms of upgrading capacity and supporting electrification and the use of alternative fuels, score very positively.
- Rail investment can help satisfy a number of problem statements because of its interactions with different freight networks and supply chains.
- Widespread road infrastructure would not fully satisfy environmental and social objectives and only goes some way to addressing problem statements.
- Road investment should still take place, but this should be targeted at specific locations, which have been identified, to leverage the role of international gateways and to improve network resilience, rather than simply boost capacity.
- There is some uncertainty around the location of additional lorry parking required across the TfSE area. Whilst this does not satisfy as many problem statements and objectives as other infrastructure investments, it will be necessary to start unlocking identified sites to address the chronic shortage of quality provision.
- The delivery of interventions is heavily reliant on third parties or private sector industry to mobilise which will be determined by market forces.
- The delivery of infrastructure measures, such as enhanced port connections, rely on joint partnership work between different bodies, as well as the availability of funding.

Local

WSCC: WEST SUSSEX CLIMATE CHANGE STRATEGY 2020

2.53 The West Sussex Climate Change Strategy 2020[33] aims for County Council operations and services to reach net zero carbon emissions by 2030. There are five key commitments but the two which are most relevant to the Transport Plan are to:

- Mitigate the effects of climate change by reducing carbon emissions; and
- Adapt and be resilient to a changing climate.

[33] WSCC: Climate Change Strategy 2020-2030 (2020)

WSCC: LOCAL FLOOD RISK MANAGEMENT STRATEGY 2021-2026 (EMERGING)

2.54 The current Local Flood Risk Management Strategy (LRMS) for West Sussex was approved in 2013. A review of the LFRMS is being undertaken to set out how WSCC will undertake its flood risk management responsibilities to 2027 to meet the duties of the Flood and Water Management Act 2010. Public consultation on a draft of the review was undertaken in summer/autumn 2021. Work on the review is currently paused pending consideration of the implications of the Environment Act 2021.

WSCC: WEST SUSSEX TREE PLAN 2020

2.55 The West Sussex Tree Plan[34] was adopted in 2020 and aims to maintain and protect trees, many of which are on the public highway and protect woodlands, as well as improve tree cover in West Sussex.

2.56 WSCC has also adopted an Ash Dieback Action Plan[35] to set out its approach to managing ash dieback which is a fungal disease that is expected to lead to the decline and death of the majority of ash trees, and which will impact trees that line highway networks.

WSCC: ECONOMY RESET PLAN 2020

2.57 The County Council have agreed an Economy Reset Plan[36] for the period 2020-2024 in response to the impact and challenges posed by the COVID-19 pandemic. The Reset Plan is an update of the Economic Growth Plan 2018-2023 and sets out priorities for supporting the recovery of the West Sussex economy. These include strategic transport investment to protect and revive Crawley and the Gatwick Diamond economy and the Coastal West Sussex towns.

WSCC: ROAD SAFETY FRAMEWORK 2016-26

2.58 The Road Safety Framework[37] outlines the County Council's vision for road safety. In recent years the number of people killed or seriously injured on roads each year in West Sussex has remained fairly stable which is consistent with the national trend. However, this is not consistent with achieving 'vision zero' (i.e. the philosophy that no one will be killed or seriously injured on roads) and the County Council's current target for road safety which is to reduce the number of people killed or seriously injured (KSIs) by 25% by 2020 (this target will be reviewed in 2022) measured against the national baseline average between 2005-09. Actual or perceived road safety issues can be a deterrent to using active travel modes. Stakeholders also express concerns about vehicle speeds in rural and urban areas.

2.59 The Framework outlines how the County Council will take a whole system approach to road safety using engineering, technology and behaviour

[34] WSCC: West Sussex Tree Plan (2020)

[35] WSCC: Ash Dieback Action Plan (2019)

[36] WSCC: Economy Reset Plan 2020-2024 (2020)

[37] WSCC: Road Safety Framework 2016-2026 (2016)

change to deliver our aspirations in collaboration with other partners. The Framework also includes a commitment to monitoring and evaluation to improve effectiveness and help refine programme delivery.

WSCC: BUS STRATEGY 2018-26

2.60 The Bus Strategy[38] sets out the County Council's aims and objectives for local bus and community transport in West Sussex. It identifies a set of challenges for buses including punctuality, ticketing systems, clean technology, bus infrastructure, the design of new developments, access for young people and from rural areas.

2.61 The Strategy explains how the County Council will work with other public sector partners and prioritise funding and support for local buses and community transport. It also outlines the County Council's approach to the Bus Services Act 2017.

WSCC: BUS SERVICE IMPROVEMENT PLAN 2022 – 2027

2.62 The County Council has produced a Bus Service Improvement plan (BSIP)[39] which includes the aim to support bus patronage recovery following the COVID-19 pandemic and to engender significant growth and quality improvements in bus provision across the County. This is relevant to the Transport Plan because it is expected that ambitious BSIPs will be a factor in determining Government funding allocations and they are expected to align closely with Local Transport Plans.

2.63 Proposals include investments in key inter-urban corridors along the coast, between Southwater, Horsham and Crawley/Gatwick Airport and between East Grinstead and Gatwick Airport/Crawley. Proposals also include improving the frequency and coverage of other services, increasing weekend and evening bus routes, introducing physical and traffic light bus priority on inter-urban routes, new mobility hubs, and creating a series of Digital Demand Responsive Transport (DDRT) services. Furthermore, proposals include: improving information including doubling the number of electronic 'real-time' displays at bus stops; automatic 'next-stop' announcements on buses; bus stop improvements (including lighting and information) and improving footway access to bus stops; improved and simplified fares including a young persons' discount fare scheme; improving service and ticketing integration with other modes; and zero-emission buses by 2035 (initially prioritising places where there are air quality problems).

WSCC: CYCLING & WALKING STRATEGY 2016-26

2.64 The Cycling & Walking Strategy[40] sets out the County Council's aims and objectives for active travel in West Sussex together with a list of priorities for investment in infrastructure improvements. It contains a list of more than 300 potential schemes, which were suggested by a range of stakeholders.

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[38] WSCC: West Sussex Bus Strategy 2018-2026 (2018)

[39] WSCC: West Sussex Bus Service Improvement Plan (2021)

[40] WSCC: Walking and Cycling Strategy 2016-2026 (updated 2020)

2.65 The strategy outlines the design and safety principles for walking and cycling infrastructure schemes and is accompanied by a Design Guide. The strategy also provides a mechanism by which schemes can be identified and prioritised to direct future investment and support future funding bids.

WSCC: ELECTRIC VEHICLE STRATEGY 2019

2.66 This is the County Council's strategy[41] to ensure that when residents travel by car and small van they choose ultra-low emission vehicles, and travel in a carbon neutral way. It has three aims:

- At least 70% of all new cars in the county to be electric by 2030;
- There is sufficient charging infrastructure in place to support the vehicles predicted to be reliant on public infrastructure to charge; and
- Ensure a renewable energy source for all charging points on County Council land or highway.

2.67 The Strategy sets out that it will achieve these aims by:

- Encouraging – focusing on communications and incentives; and
- Enabling – focusing on the provision of charging infrastructure.

WSCC: RIGHTS OF WAY MANAGEMENT PLAN 2018-28

2.68 This is the County Council's Right of Way Improvement Plan[42] and demonstrates how the County Council, working alongside partners, will manage the Public Rights of Way (PRoW) network and provides a framework for involving local stakeholders.

2.69 Working in partnership with volunteers and key organisations, the objectives of the Plan are to:

- Manage the existing PRoW network efficiently and maintain to an appropriate standard for use;
- Improve path links to provide circular routes and links between communities;
- Improve the PRoW network to create safe routes for both leisure and utility journeys, by minimising the need to use and cross busy roads;
- Provide a PRoW network that enables appropriate access with minimal barriers for as many people as possible;
- Promote countryside access to all sections of the community, enabling people to confidently and responsibly use and enjoy the countryside;
- Support the rural economy; and
- Support health and wellbeing.

[41] WSCC: Electric Vehicle Strategy 2019-2030 (2019)

[42] WSCC: Rights of Way Management Plan 2018-2028 (2018)

WSCC: CREATING HEALTHY AND SUSTAINABLE PLACES: A PUBLIC HEALTH AND SUSTAINABILITY FRAMEWORK FOR WEST SUSSEX, 2021

2.70 This framework[43] provides public health guidance to decision makers about creating healthy and sustainable places and communities in West Sussex. The framework sets out why it is important to consider health and wellbeing in shaping our communities and the County Council has an overarching role in this. The themes of the framework include:

- Healthy development from a public health view;
- Placemaking and good design in relation to health and wellbeing;
- Planning for health, wellbeing and sustainable development;
- Health Impact Assessments (HIAs) and how they can be used to ensure health is at the heart of new development and communities; and
- The impact climate change has on human health.

WEST SUSSEX INTER-AUTHORITY AIR QUALITY GROUP: BREATHING BETTER: A PARTNERSHIP APPROACH TO IMPROVING AIR QUALITY IN WEST SUSSEX

2.71 The county-wide air quality plan was produced by the County Council and District and Borough Councils across West Sussex. It reviews ongoing activity and sets out future areas of focus for tackling air pollution in West Sussex. It covers the following themes: low emission vehicles, traffic management, sustainable transport infrastructure, behaviour change, health and wellbeing, planning, travel planning and resourcing.

LOCAL CYCLING & WALKING INFRASTRUCTURE PLANS

2.72 LCWIPs identify aspirations for cycle infrastructure improvements. LCWIPs or equivalent documents have been developed or are in the process of being developed for West Sussex, and for Adur, Arun, Chichester, Crawley, Horsham, Mid Sussex, SDNP and Worthing.

LOCAL PLANS

2.73 Local Plans, prepared by the Local Planning Authorities in West Sussex, set out policies to guide land use and future planning decisions. Local Plans are in place for all areas of West Sussex, although some are in various stages of being reviewed. All the adopted Local Plans allocate sites for development that are or can be made sustainable through the provision of infrastructure and services, including for transport. Sites for over 76,000 new homes are allocated in adopted local plans across West Sussex from the early 2010s through to the early 2030s, with additional sites expected to be allocated as these are reviewed. There are also Waste and Minerals local plans adopted in West Sussex. All adopted Local Plans include policies encouraging the provision of transport

[43] WSCC: Creating healthy and sustainable places. A framework for West Sussex (2021)

infrastructure or services that will make development acceptable in planning terms and encourage use of sustainable modes of transport[44].

2.74 The transport evidence base for the adopted Local Plans outlines that as development takes place, without mitigation this would lead to, or exacerbate, congestion at capacity pinchpoints and in some cases, safety issues. Therefore, mitigation measures have been identified to mitigate the severe impacts of development that will be expected to come forward, either as development takes place or as part of strategic improvements to the transport network delivered by the County Council or other partners such as National Highways.

NEIGHBOURHOOD PLANS

2.75 Neighbourhood Plans are in place in some areas. Neighbourhood Plans generally set out how parish housing allocations set in Local Plans will be met in the plan area and provide development management policies that apply in the plan area. Many Neighbourhood Plans also identify local transport issues or aspirations that communities would like to be addressed as development takes place.

3. Analysis

3.1 The analysis in this section begins by focusing on environmental issues, followed by economic and then social issues, before considering transport network specific issues. Each section also includes a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis that has informed the WSTP.

Global & National Environmental issues

CLIMATE CHANGE (SEA LEVEL RISE, FLOODING, EXTREME WEATHER)

3.2 Climate change is a long-term change in weather and temperature on the earth and has been widely documented to be one of the biggest global challenges. The United Nations Intergovernmental Panel on Climate Change (IPCC) concluded in 2018 that without substantial efforts to curb greenhouse gas emissions over the next ten years, there will be severe, widespread and irreversible impacts on societies[45]. Overall, since the 1970s, the world average temperature has already risen by 1°C, which is already changing the severity and frequency of extreme weather events around the globe.

3.3 The climate in the UK is changing and the Government has recognised the need to act to protect the natural environment. In 2018, the UK Met Office published their climate projections for the next century and these

[44] West Sussex currently has five rail linked depots: Chichester Railway Sidings; Ardingly Rail Depot; Tinsley Goods Yard; and 2 x Goods Yards in Crawley. The Joint West Sussex Minerals Local Plan includes a policy to safeguard minerals infrastructure including wharfs and railheads in West Sussex; WSCC & SDNPA: West Sussex Joint Minerals Local Plan (2018 – Partial Review March 2021).

[45] IPCC: Special Report on Global Warming of 1.5°C (2018)

were revised in 2020 to reflect further models of future climate; these are based on different rates of greenhouse gas emissions into the atmosphere[46]. The high emission scenario demonstrated what this means for us nationally:

- Hot summers are expected to become more common: Currently, climate change has already increased chances of seeing warmer summers between 12-25 per cent. With further change to the climate, hot summers by 2050 could be even more common, near to 50 per cent.
- Drier summers and wetter winters: average summer rainfall could decrease by up to 47 per cent by 2070, while there could be up to 35 per cent more precipitation in winter. This change could mean water shortages during the summer months and flooding during winter.
- Increased severe weather events: there will be an increase in the frequency and intensity of storms. With heavy rain events replacing lowland snow events during winter, due to increased temperatures.
- Increased risk for West Sussex: the changing patterns in precipitation and storms in our county makes us particularly vulnerable to an increased year-round risk of more frequent river, surface and coastal flooding.
- Potential rise in sea levels: in West Sussex where many of our communities are coastal, or near tidal rivers, this could be significant.

3.4 In West Sussex, climate change is an increasing threat. As the climate changes, extreme weather events are predicted to become more frequent and severe. This has the potential to cause disruption to the economy and the ability for the County Council to deliver key services. By 2050, West Sussex is expected to experience changes in climate, including warmer and wetter winters, plus hotter and drier summers, with an increase in storm events bringing flooding and damage. Such conditions are likely to result in challenges, such as heat stress, heat-related deaths, water shortages and rising sea levels. Negative impacts on ecosystems and the natural environment will also be noticeable, with reductions in sensitive species, flora and fauna. However, they may also offer opportunities, such as an increase in tourism to the area and the chance to develop new agricultural practices suited to warmer conditions.

3.5 Another less obvious risk of issues to the road network, but one becoming more common as summers warm, is heat damage to road surfaces. This may be a problem on local roads, as these have lower surface specifications than motorways and trunk roads. The heatwave of 2003, for instance, led to a significant repair bill for local authorities. Damaged roads would need to be repaired, causing disruption to traffic, with repairs potentially postponed until temperatures fall enough for the new road surface to 'set'. In some cases, this might mean there is a need to work at night when it is cooler.

[46] UK Met Office: State of the UK Climate (2020)

RISE IN SEA LEVELS/FLOODING

3.6 Consideration of the resilience of the transport system to extreme weather needs to be informed by a deeper understanding of weather: the typical weather patterns in the UK, the characteristics of extreme weather events and the changes anticipated in the light of climate change.

3.7 Global warming and the gradual sinking of the south of England is leading to increased sea levels and loss of valuable habitats. The worst-case scenario of a rise of 4°C by 2100 would be disastrous for the coast of West Sussex, with many major towns and cities affected[47]. With a 1°C rise by 2100, there would still be a risk of major flooding events across the County, but large parts of the Arun and Adur valleys would be affected from a rise in river flows.

3.8 Transport infrastructure may face an increased risk from river and tidal flooding. The length of road liable to flooding may increase significantly and, for infrastructure already located in floodplains, flooding may also occur more frequently, leading to more travel disruption and delays. In 2007 in parts of the UK, widespread flooding of major and minor roads caused disruption estimated to have cost £100 million, largely borne by road users. By the 2080s, if no action is taken, this level of cost may be incurred almost annually, due either to a one-off event or multiple events like the floods of 2007. Covering the whole UK road network, 6,600 km of the road network is located in areas susceptible to flooding, which could increase by 53-160% by the 2080s. The cost of disruption from flooding in 2007 was £200 million and a flood event of this scale could be possible on an annual basis by the 2080s[48].

3.9 The transport network will need to adapt to cope with these effects of climate change. This is relevant to the Transport Plan because it will affect the design of new or improved infrastructure and also maintenance by taking account of the impacts on network resilience.

CARBON EMISSIONS

3.10 Modes of transport that rely on fossil fuels for propulsion are a source of both greenhouse gases and air pollutants, being responsible for significant contributions to emissions of carbon dioxide which contributes to climate change. Across the UK, carbon emissions have been dropping since the early 1980s, but with more positive falls in emissions since 2010. This brings the total reduction to 29% over the past decade since 2010, even as the economy grew by a fifth[49]. That said, transport is now the largest contributing sector to UK domestic greenhouse gas emissions (contributing 27% of UK domestic emissions in 2019). Although there has been a 44% overall reduction in UK domestic greenhouse gas emissions since 1990, domestic transport emissions

[47] UK Met Office: State of the UK Climate (2019)

[48] UK Government: UK Climate Change Risk Assessment – Chapter 4: Infrastructure (2017)

[49] Carbon Brief: UK Emissions Analysis (2020)

have only fallen by 5% in this period[50]. Emissions from road transport will need to significantly reduce to achieve the Government's legally binding target to achieve net zero carbon emissions by 2050.

3.11 Emissions from road transport are likely to be significantly impacted by initiatives designed to help achieve the target of net zero carbon emissions by 2050. As the UK looks to move towards this, the Government's Road to Zero[51] transport strategy includes the ambition that by 2050 almost every car and van will be zero emission. The Committee on Climate Change (CCC) advises the Government on progress towards the UK emissions targets and reports on five-year carbon budgets that act as 'stepping stones' towards net zero carbon emissions in 2050. The UK is currently on track to achieve its third carbon budget to achieve 2,544MtCO2e in the 2018-22 period. However, it is off track to achieve its fourth carbon budget of 1,950MtCO2e in the 2023-27 period. The Committee on Climate Change's (CCCs) net zero technical report[52] notes that, in order to achieve the net zero carbon emissions by 2050, sales of non-zero emission cars, vans and motorcycles are likely to need to end by 2035.

3.12 As the UK moves towards 2050, it expected that new policies, strategies and initiatives will be introduced to support the achievement of the target and associated carbon budgets. The Government's Road to Zero[53] transport strategy includes the ambition that by 2050 almost every car and van will be zero emission. The Government has committed to a carbon reduction programme in its Transport Decarbonisation Plan[54], based on projections for transport emissions as shown in Figure 1 (domestic) and Figure 2 (domestic and international) in Appendix A. The Transport Decarbonisation Plan also includes other projections (not included in Figures 1 and 2) that show projections for each of the individual transport modes.

3.13 In 2011, the County Council committed to reducing its carbon footprint by 50% by 2022. By 2018/19 a 46% reduction in carbon emissions from the original baseline had been achieved. By April 2019, the Council went further and passed a motion pledging to try to reach net zero carbon emissions by 2030. This work contributes to the wider national commitment to be carbon neutral by 2050 and to strengthen the UK's preparedness for climate change.

3.14 The Transport Plan is a key policy for the County Council to set out its ambitions to decarbonise the transport system in West Sussex and address trade-offs (e.g. economic prosperity) associated with the interventions that will decarbonise the transport system. It provides an opportunity to set out how the County Council will balance its objective to decarbonise alongside its other environmental, social and economic objectives and address conflicts when they occur. The Transport Plan

[50] DfT: Transport and Environmental Statistics 2021 Annual report (2021)

[51] HM Government: The Road to Zero (2018)

[52] Committee on Climate Change (CCC): Net Zero Carbon Report (2019)

[53] HM Government: The Road to Zero (2018)

[54] DfT: Decarbonising Transport: A Better, Greener Britain (2021)

should set out place-based strategies to achieve its objectives and will sit alongside other County Council plans, strategies and initiatives and those of partners such as Local Planning Authorities and transport providers to bring about the changes that are needed.

3.15 Strengthening the resilience of services helps to understand the risks and opportunities and what needs to be done. The County Council has promoted Operation Watershed with more than £3 million since 2013 to support local communities in reducing the risk of localised surface and groundwater flooding.

3.16 Public perception of global and national environmental issues has seen a steady increase over the past decade. With global climate emergencies being declared, in response to protests and growing anger, national governments are developing plans to combat carbon emissions and the negative effect they are having on the planet. However, the degree to which communities in West Sussex will accept the types of interventions needed to decarbonise and adapt to climate change is unclear. The Transport Plan should consider this issue and include plans to build the necessary stakeholder support for these changes as it is implemented.

Global and National Environmental Issues SWOT Analysis

STRENGTHS:

- The legally binding target to achieve net zero carbon emissions by 2050 provides a clear, time-bound target to focus on.
- The County Council has already developed a Climate Change Strategy that commits to reducing its own carbon emissions and adapting to climate change.
- The County Council has already developed an Electric Vehicle Strategy setting out how it will support electrification of the vehicle fleet.

WEAKNESSES:

- Fossil fuel usage in West Sussex remains high (but below UK average) despite investment in sustainable transport infrastructure and services.
- Emissions from road transport are reducing but not fast enough to achieve the Government's ambition.
- Full electrification of the vehicle fleet is unlikely to be possible as larger vehicles (e.g. HGVs) may not be viable for conversion.
- Progress in West Sussex is (in part) dependent on national legislation, policy and initiatives (e.g. grants for an individual to install an electric car charging point).

OPPORTUNITIES:

- Education about climate change to ensure there is public acceptance of the need for change which will include trade-offs.

- Stakeholder engagement is needed to explore which interventions have acceptable trade-offs, building on existing fora such as the Climate Change Advisory Panel.
- Development of alternative fuel technologies (e.g. hydrogen) where this is the preferable option where this is the preferable option.
- Potential to use renewable energy sources to meet any future increase in demand.
- Potential to use new technologies (e.g. within individual electric vehicles) to store electricity, creating additional capacity for the additional demand on electricity.

THREATS:

- Opposition to interventions due to economic costs and other trade-offs.
- Budgets may not be sufficient to achieve desired outcomes.
- Lack of influence over the location and scale of development which can generate additional travel demand.
- Climate change impacts on West Sussex are uncertain and could be more or less extreme than expected.
- High cost of electric vehicles relative to fossil fuelled equivalents may slow the pace of electrification.
- Consumer demand and trends such as purchasing larger vehicles may slow or negatively offset reductions in vehicle fleet emissions.

Local Natural Environment

LAND USE

3.17 West Sussex is the second most wooded English county after Surrey. It has a rich legacy of remnant ancient woodland and extremely varied woodland landscapes. These include the deep ghyll woodlands of the High Weald; the remnant thick woodland belts between fields in the Low Weald (shaws / rews); the downland plantations and woods hanging on the steep downland edge; and the newer woodlands developed over the acidic soils of the Greensand hills[55].

3.18 Land use is vital in transport planning for West Sussex, as many projects will require land purchase. The coastal plain is an area where large populations currently live, including the City of Chichester and towns such as Worthing, Bognor Regis and Shoreham-by-Sea. These areas have many plans for urban expansion over the next 10 years, which means urban fringe development involves encroachment and destruction of natural habitats and requires further work.

BIODIVERSITY, DESIGNATED AREAS & PROTECTED HABITATS

3.19 The National Ecosystem Assessment concluded that the UK's ecosystems are currently delivering some services well, but others are in long term decline. Population growth and climate change are expected to increase

[55] WSCC: A Strategy for the West Sussex Landscape (2005)

pressures on ecosystem services in the future[56]. The transport network and its improvement has the potential to impact biodiversity through; loss or fragmentation of habitats; air, noise or light pollution that can contribute to loss of species. A biodiversity metric is a habitat-based approach used to assess an area's value to wildlife and can be used by ecologists or developers carrying out a biodiversity assessment.

3.20 Biodiversity Net Gain (BNG) is an approach to development that leaves biodiversity in a better state than before. Where a development has an impact on biodiversity it encourages an increase in appropriate natural habitat and ecological features over and above that being affected in such a way it is hoped that the current loss of biodiversity through development will be halted and ecological networks can be restored. The Environment Act 2021 includes a requirement that from 2023, development that requires planning permission will be required to provide a minimum of 10% BNG.

3.21 Local Authorities have a duty to complete the application of the mitigation hierarchy to avoid, mitigate or compensate for biodiversity losses. BNG is additional to these approaches, not instead of them. This is relevant to the Transport Plan as the mitigation hierarchy and requirement for development to provide BNG should influence the design of transport interventions.

Designated Areas

3.22 Nationally designated areas (i.e. areas of outstanding natural beauty and national parks) are protected from major development by national policies. This will influence the type of transport interventions that can be introduced in these areas, or places where they would affect the setting of the designated area. Therefore, they should be taken into account in the development and implementation of the Transport Plan.

Areas of Outstanding Natural Beauty

3.23 There are two Areas of Outstanding Natural Beauty (AONB) in West Sussex: Chichester Harbour and the High Weald.

3.24 There is a duty on the constituent local authorities to prepare a Management Plan that 'formulates their policy for the management of their area of outstanding natural beauty and for the carrying out of their functions in relation to it'. The duty is also to review adopted and published management plans at intervals of not more than five years.

3.25 The current Chichester Harbour Management Plan 2019-2024[57] was adopted in 2019.

3.26 The High Weald AONB Management Plan 2019-2024[58] was also adopted in 2019.

[56] DEFRA: Biodiversity 2020: A strategy for England's wildlife and ecosystem services

[57] Chichester Harbour Conservancy: Chichester Harbour Management Plan 2019-2024 (2019)

[58] High Weald Joint Advisory Committee: The High Weald AONB Management Plan 2019-2024 (2019)

South Downs National Park

3.27 The South Downs National Park is one of England's newest national parks, covering an area of 1,627 square kilometres (628 square miles), from Winchester in Hampshire to Beachy Head in East Sussex. The National Park is administered by the South Downs National Park Authority (SDNPA) and was established on the 1st April 2010.

3.28 The National Park purposes are:

- To conserve and enhance the natural beauty, wildlife and cultural heritage of the area;
- To promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public; and
- The National Park Authority also has a duty when carrying out the purposes to seek to foster the economic and social well-being of the local communities within the National Park.

3.29 In addition, Section 62 of the Environment Act 1995 also requires all relevant authorities, including statutory undertakers and other public bodies, to have regard to these purposes. Where there is an irreconcilable conflict between the statutory purposes, statute requires The Sandford Principle to be applied and the first purpose of the National Park will be given priority.

3.30 The Partnership Management Plan 2020-2025[59] was adopted in 2020 and sets out the approach to managing the SDNP for the five-year period.

Protected Habitats (SACs, SSSI, Ramsar & SPAs)

3.31 West Sussex supports a rich diversity of habitats and species, ranging from chalk grasslands and pockets of vegetated shingle, through to heathlands across the county. However, less than 62,000 hectares (ha) of Sussex are protected for their value to wildlife; around 16% of the total land area. Sussex is also home to around 80 protected species and more than 495 species recognised as being a priority for conservation[60].

3.32 Below is the current list of international conservation areas in West Sussex:

- Sussex Special Areas of Conservation (SAC)
  - Arun Valley SAC
  - Duncton to Bignor Escarpment SAC
  - Ebernoe Common SAC
  - Kingley Vale SAC
  - Rook Clift SAC
  - Singleton and Cocking Tunnels SAC
  - Solent Maritime SAC

[59] SDNPA: South Downs National Park Partnership Management Plan (2020)

[60] Sussex Wildlife Trust: Biodiversity and Planning in Sussex (2014)

- The Mens SAC
- Sussex Special Protection Areas (SPA)
  - Arun Valley SPA
  - Chichester and Langstone Harbours SPA
  - Pagham Harbour SPA
  - Wealden Heaths Phase ll SPA
- Ramsar Sites
  - Arun Valley
  - Chichester and Langstone Harbours
  - Pagham Harbour

AIR POLLUTION

3.33 By definition, air pollution are particulates suspended as aerosols and are a common by-product of vehicle use around the world, which is causing a major threat to the environment and health. For example, NO_2 contributes to acidification of soils which can lead to loss of plant diversity. NO_2 also adds excessive nutrients to water courses that can cause algal blooms, which in turn can cause fish mortality and loss of plant and animal diversity.

3.34 A review[61] commissioned in 2019 by the Department for Health and Social Care (DHSC) is clear on the scale of harm from air pollution. It is the largest environmental risk to the public's health in the UK with:

- estimates of between 28,000 and 36,000 deaths each year attributed to human-made air pollution;
- a close association with cardiovascular and respiratory disease including lung cancer;
- emerging evidence that other organs may also be affected, with possible effects on dementia, low birth weight and diabetes; and
- emerging evidence that children in their early years are especially at risk, including asthma and poorer lung development.

Air pollution in the UK

3.35 Road transport continues to be the main source of air pollution within the United Kingdom. Nitrogen dioxide (NO_2) is of particular concern because there is widespread exceedance in the UK, of limit values for this pollutant. NO_2 is associated with adverse effects on human health. The Government's Clean Air Strategy[62] sets out how air pollution by pollutants other than greenhouse gases, such as nitrogen oxides and particulate matter, can be reduced.

3.36 Between 1970 and 2019 (the most recent year for which data are available), UK estimated emissions of nitrogen oxides have fallen by

[61] PHE: Review of interventions to improve outdoor air quality and public health (2019)

[62] DEFRA: Clean Air Strategy (2019)

73%, UK estimated emissions of PM_{10} particulate matter have fallen by 53% and UK estimated emissions of $PM_{2.5}$ particulate matter have fallen by 54%[63]. However, growing evidence of the effects of non-tailpipe particulate emissions from road traffic is becoming more focused. Non-exhaust particle emissions from road traffic consist of airborne particulate matter (PM) generated by the wearing down of brakes, clutches, tyres and road surfaces, as well as by the suspension of road dust. A growing body of evidence shows that PM emissions have significant implications for human health. Furthermore, the damages to human health caused by PM emissions from road traffic can be disproportionately large relative to other sources of PM emissions, as the highest emission levels tend to be localised in areas with the greatest population density, leading to high levels of exposure. Despite the significant burden of non-exhaust emissions on public health, few public policies target them explicitly[64].

Air Pollution in West Sussex

3.37 In West Sussex, road transport emissions have been reducing. All the local authorities in West Sussex are committed to working together to improve air quality. West Sussex, as a predominantly rural county, does not suffer the difficulties of large metropolitan areas but has its own challenges.

3.38 Since December 1997, each local authority in the UK has been carrying out a review and assessment of air quality in their area. Where air quality standards are exceeded, local authorities declare Air Quality Management Areas (AQMAs) and prepare Air Quality Action Plans (AQAPs) to address the identified problems. In West Sussex, the seven District and Borough Councils are responsible for declaring AQMAs and preparing AQAPs. Where the designation of an AQMA is related to traffic, the County Council has a statutory duty to work with the relevant District or Borough Council to develop and deliver AQAPs.

3.39 There are currently eleven AQMAs due to current or previous measured exceedances of the air quality standard for oxides of nitrogen[65] because of the proximity of traffic to air quality receptors at the following locations in West Sussex:

- A259 High Street, Shoreham
- A270 Upper Shoreham Road, Southwick
- A286 Orchard Street, Chichester
- A286 St Pancras, Chichester

[63] Defra: Air Pollution in the UK 2019 (2020)

[64] OECD: Non-exhaust Particulate Emissions from Road Transport: An Ignored Environmental Policy Challenge (2020)

[65] The statutory air quality objectives related to Nitrogen Dioxide (NO_2) are 200 µg/m3 not to be exceeded more than 18 times a year (measured as a 1-hour mean) and 40 µg/m3 (measured as an annual mean). The 1-hour mean measure is not generally an issue for West Sussex AQMAs as air quality exceedances are not at a level that would pass this threshold. It is annual mean exceedances which are relevant to West Sussex AQMAs.

- A27/A286 Stockbridge Roundabout, Chichester
- A272 Rumbolds Hill, Midhurst
- Hazelwick Roundabout/A2011 Crawley Avenue, Crawley
- A272 High Street, Cowfold
- A283 High Street/Manley's Hill, Storrington
- A273/B2116 Stonepound Crossroads, Hassocks
- A27/A24 Grove Lodge Roundabout, Worthing

WATER POLLUTION

3.40 In the UK, water quality continues to improve. However, in 2016, 86% of river water bodies had not reached good ecological status and nearly half of groundwater bodies will not reach good chemical status by 2021. Bathing water quality has improved over the last 30 years with 98% passing minimum standards and 65% at excellent status in 2017[66]. Population growth, climate change, emerging chemicals, plastic pollution, nanoparticles and fracking are all related to the transport system and all present potential future threats to water quality.

3.41 Within West Sussex (in 2019), five beaches were reported as having excellent (3 stars) water quality, one beach was reported as having good (2 stars) water quality and one beach was reported as having sufficient (1 star) water quality. This measure is a composite of all the data that is monitored in the water sampling. It includes algae, e-coli and many other indicators. The data cannot determine the source of these contaminants, however, after heavy rainfall, the highways will discharge water into the overflow system and this will include animal waste and oils that are left on the highway.

3.42 Nitrate is one of the main causes of pollution within the UK and the main source of this is agricultural runoff from farmland, entering water courses and the sea. However, urbanisation and transport infrastructure are becoming more of an influencing factor of this type of pollution. Sewage discharge is a common cause of nitrate pollution within water bodies, but with increased rainfall and storm flows from non-permeable surfaces, this adds to an increasing amount of pollution from roadways; and this allows a mix of sewage and surface water flow into river systems and catchments[67]. The two locations with the lower water quality in 2019, were Worthing and Lancing, where urban creep (such as non-permeable driveways) could be adding to the burden from agricultural pollution.

3.43 Urban areas and the transport network are a source of environmental contaminants, which include hydrocarbons, metals (including zinc, cadmium and copper), plastics, nutrients (including phosphate), ammonia, pathogens and sediment quantity and content (i.e. carrying solid pollutants). Road network pollutants come from tyre and brake wear, exhaust emissions, oil and fuel deposits. It is also a source of

[66] Environment Agency: The state of the environment: water quality (2018)

[67] EEA: Water use and environmental pressures (2020)

microplastics from paint on buildings and road markings. Such contaminants entering water bodies (rivers, streams, lakes) and groundwater have an adverse impact on water quality and ecology. Alongside this is the physical modification of water bodies, which also has an impact on the water environment. The principal route for these pollutants is through surface water runoff, and vast and unquantified number of drainage outfalls carrying road runoff, meaning Sustainable Drainage Systems (SuDS) are now a requirement.

3.44 As of March 2019, 18 per cent of water bodies in England (879 out of a total of 4950 water bodies) were identified as being damaged by pollution from towns, cities and transport. However, pressure on the water environment in towns and cities and from transport is increasing. The pressures resulting from pollution from towns, cities and transport are likely to made worse by climate change and population growth[68].

NOISE POLLUTION

3.45 The WHO (World Health Organisation) states[69] that noise is an underestimated threat that can cause a number of short- and long-term health problems, such as for example sleep disturbance, cardiovascular effects, poorer work and school performance, hearing impairment, etc. Studies and statistics on the effects of chronic exposure to aircraft noise on children have found:

- consistent evidence that noise exposure harms cognitive performance;
- consistent association with impaired well-being and motivation to a slightly more limited extent; and,
- moderate evidence of effects on blood pressure and catecholamine hormone secretion.

3.46 Noise mapping has been undertaken by DEFRA to identify locations of potential noise problems which are known as Noise Important Areas (NIAs)[70]. Within West Sussex, 292 NIAs have been identified through its Round 3 mapping, 23 of these which are related to rail noise, 65 of these have been identified in relation to the Strategic Road Network which are the responsibility of Highways England, and 204 of which are the responsibility of the County Council as the local highway authority. Additionally, parts of West Sussex including the Crawley, Worthing and Littlehampton areas have been identified as part of the DEFRA Noise

[68] Environment Agency: 2021 River Basin Management Plans: Pollution from Towns, Cities and Transport (2019)

[69] WHO: Noise – data and statistics webpage (accessed 2021)

[70] DEFRA: Noise Action Plan: Roads (2019); Important Areas with respect to noise from major roads outside agglomerations are where the 1% of the total population that are affected by the highest noise levels from major roads are located according to the results of the strategic noise mapping. For major roads the total population is the number of people within the 50 dB $L_{A10,18h}$ contour outside agglomerations according to the results of the strategic noise mapping and the 2015 mid census updates. At some locations, there may be an opportunity to investigate beyond the top 1% of the population but there is no requirement to investigate those dwellings where the LA10,18h is below 65 dB according to the results of the strategic noise mapping.

Action Plan: Agglomerations. There is a statutory requirement for highway authorities to investigate the results of the noise mapping where this is related to roads and produce noise action plans to address identified issues.

3.47 The noise mapping undertaken by DEFRA has been undertaken to identify locations of potential residential exposure problems in relation to traffic noise, with some of the impacts on public health also considered further in the accompanying people chapter. There are known to be impacts on the natural environment from transport-related noise exposure. The European Commission[71] has identified key areas where noise has a negative impact on the environment:

- Human noise impacts or anthropogenic noise does not only affect species sensitive to noise but has impacts on a wide range of terrestrial and aquatic species that inhabit very different ecosystems.
- Anthropogenic noise causes a range of physiological and behavioural responses in terrestrial and marine wildlife, which can lead to reduced reproductive success, increased mortality risk and emigration, resulting in decreased population densities.
- Although the responses to noise are very much species dependent, effects can start to appear at levels as low as 40 dB(A) for terrestrial animals. In addition to levels of noise, impacts may also depend on noise frequency and type.
- At least 19% of nature protection areas covered by Natura 2000 are located in areas where noise levels are above the Environmental Noise Directive reporting thresholds because of roads, railways and aircraft.

LIGHT POLLUTION

3.48 Research suggests that artificial light pollution at night including from street lights can negatively affect human health, increasing risks for obesity, depression, sleep disorders, diabetes, breast cancer and other illnesses[72]. Light pollution is also understood to affect wildlife, for example street lights along a road can act as a barrier to bats commuting to their feeding sites, while insects and different species of birds are also known to be affected by artificial light pollution in different ways[73]. Research has also suggested that 'eco-friendly' LED streetlights can be more damaging to insect populations than traditional sodium bulbs[74]. For these reasons, light pollution should be considered in the development and implementation of the Transport Plan.

[71] European Environment Agency: Environmental noise in Europe (2020)

[72] International Dark-Sky Association: Light Pollution and Human Health (web article) (accessed 2022)

[73] Natural History Museum: Bye-bye dark sky: is light pollution costing us more than just the night-time? (web article) (accessed 2022)

[74] UK Centre for Ecology & Hydrology: LED streetlights reduce insect populations by 50% (web article) (2021)

3.49 Part of West Sussex is also included in the South Downs National Park Dark Sky Reserve which should be taken into account in the development and implementation of the Transport Plan.

Local Natural Environment SWOT Analysis

STRENGTHS:

- There is a joint authority air quality plan[75] for West Sussex that provides a plan of action for tackling air quality issues.
- Biodiversity is now recognised as of high importance across all local and national plans and legislation has been introduced that will require developments to provide at least 10% BNG from 2023.
- Environmental designations (e.g. SDNP) are in place to protect many environmentally sensitive areas in West Sussex.

WEAKNESSES:

- AQAPs have been slow to deliver their objectives.
- New AQMAs are still being declared.
- Air quality and noise pollution issues are often given less weight in decision-making / prioritisation than other considerations.
- There are pre-existing surface water flooding issues which developers cannot be required to resolve.

OPPORTUNITIES:

- Inter-authority partnerships (e.g. Sussex Air Quality Partnership and Transport for the South East) are in place to facilitate joint working on environmental issues that cross boundaries.
- Monitoring and technology enhancements may improve pollution and biodiversity. Techniques such as expansion of roadside pollution monitors may further highlight 'at risk' areas.
- Further enhancement in environmental policies, such as biodiversity protections or vegetation management plans across the UK may promote a more sustainable approach to biodiversity in the future.
- Shift to electric vehicles could reduce air and noise pollution from transport.

THREATS:

- Limited funding to address air, noise and light pollution issues.
- Potential local opposition to interventions due to economic costs and other trade-offs.
- Continuing rise in population of West Sussex, could mean a greater risk of damage to the natural environment if travel is made using fossil fuel-based modes.

[75] West Sussex Inter-Authority Air Quality Group: Breathing Better: Air quality plan (2020)

- Transport network improvements may require land which forms part of diverse and sensitive areas and habitats.

Local Built and Historical Environment

CONSERVATION AREAS

3.50 A conservation area is an area of special historical interest that is protected by law. Local council and districts designate conservation areas under the Planning (Listed Buildings and Conservation Areas) Act 1990. Conservation areas can range from a small group of buildings to a whole town or village. Conservation areas do not necessarily cover the whole settlement; normally it is only the historic core of a village, town or city which is designated. Conservation areas have extra planning controls on them to protect the character and appearance of historic or architectural elements. Within West Sussex there are many conservation areas, which are summarised in Table 1 in Appendix A.

HISTORIC ENVIRONMENT

3.51 The distinctive character of our surroundings has a fundamental impact on our quality of life. Identifying, protecting and enhancing the natural, historic and cultural elements that contribute to character are key activities contributing to sustainability.

3.52 Transport improvements may affect the historic environment, although many do no significant harm. Impacts can result from increasing levels of existing traffic in historic towns, cities and the countryside which may cause damage to heritage assets. Infrastructure improvements may also cause damage to historic landscapes and heritage assets.

3.53 Archaeological Notification Areas (ANAs) are areas that indicate the existence, or probable existence, of archaeological heritage assets based on the West Sussex Historic Environment Record (HER). The purpose of the ANAs is to identify where there is a likelihood of archaeological work being necessary, when land development of any kind is planned, including transport infrastructure improvements. They are a form of early warning system so that appropriate steps can be taken to record and protect heritage assets in advance of development. The ANAs are one of the considerations that should be take into account in developing and implementing the Transport Plan.

3.54 Within West Sussex, the Landscape Character Assessment was completed in 2005[76]. This resulted in the identification of 42 unique areas and the production of land management guidelines for each character area. The Landscape Character Assessment ensures that buildings and infrastructure are located to avoid loss of important on-site views, and off-site views towards features such as church towers, fine buildings, historic and archaeological monuments or the wider landscape, as well as avoiding intrusion onto sensitive ridgelines, prominent slopes, and damage to settlement settings.

[76] WSCC: A Strategy for the West Sussex Landscape (2005)

3.55 Given the substantial increase in traffic over the last few decades, many new roads have been built to cope with the flows. Large roads present particular landscape challenges and can be a threat to tranquillity. Much can be done to mitigate the impact of highways development, improvement and maintenance on the landscape, whilst meeting road safety requirements. WSCC guidelines which seek to ensure that all programmes and schemes respect and reinforce local character and distinctiveness should be used for new roads, major road improvements, maintenance works and also smaller schemes, which can have a cumulative impact on the character and appearance of an area. Good design principles should aim to ensure that all proposed programmes and schemes respect and seek to enhance the character, appearance and local distinctiveness of urban and rural areas. The Landscape Character Assessment advised that programmes and schemes should:

- Ensure that routes for new roads and bypasses are aligned and designed to respond to the pattern and character of the landscape, minimising their impact on existing landscape and historic landscape features and allowing sufficient space for embankments and cuttings to be shaped to reflect the surrounding landform.
- Secure mitigation measures including new planting, earthworks and physical measures reflecting the pattern and character of the local landscape, and where possible ensure that these measures are partly or wholly undertaken in advance of construction.
- Secure bridges and other engineering structures of elegant design with clean lines, reflecting where possible traditional local design, and using locally distinctive building materials where appropriate and available.
- Ensure, where appropriate, habitat creation and enhancement within the road curtilage and seek such measures off-site, on land secured specifically for this purpose.
- Encourage reappraisal of the visual impact of existing major roads and develop landscape enhancement schemes to help to integrate them more effectively into the landscape.
- Limit the extent and intensity of lighting to the levels required for road safety.

3.56 In addition, guidance by Historic England on preparation of Local Transport Plans and the Historic Environment[77] advises about good design principles for all programmes and schemes to respect and seek to enhance the character, appearance and local distinctiveness or urban and rural areas. This includes:

- Conserving distinctive heritage features in situ.
- Reinstating distinctive heritage features where appropriate, ensuring the sympathetic design and siting of new street furniture (including

[77] Historic England: Local Transport Plans and the Historic Environment (2021 advise for preparing local transport plans appended to Draft WSTP consultation response)

lighting), and promoting the use and, where appropriate, re-use of local natural materials.

- Including detailed features such as materials, street furniture, signage, lighting, and roadside trees that can all make an important contribution to the appearance and character of Conservation Areas. 'Streets for All' sets out general principles for such features with the aim of reducing clutter, co-ordinating design and reinforcing local character.

3.57 Furthermore, the guidance advises that the preparation and review of Local Transport Plans incorporates the following:

- A holistic approach to the historic environment encompassing designated and non-designated aspects, as well as the wider landscape and townscape;
- A clear understanding and recognition of locally significant aspects of the historic environment, in addition to national designations;
- A comprehensive appraisal of the potential direct, indirect and cumulative impacts on the historic environment through the SEA/SA process;
- A consideration of the opportunities for measures to improve the conservation and future maintenance of the historic environment, as well as its use and enjoyment;
- A set of overarching design principles which seek to ensure that all programmes and schemes respect and reinforce local character and distinctiveness; and
- An integral programme of on-going liaison with local conservation officers and archaeological staff.

Local Built and Historic Environment SWOT Analysis

STRENGTHS:

- West Sussex has extensive coverage of protected areas; e.g. conservation areas.
- Breadth of information available; e.g. Landscape Character Assessment and Historic Environment Record, to inform decision-making.

WEAKNESSES:

- Further work on protections of the environment is needed.
- Environmental constraints can limit the options for intervention.
- Ground historic assets are not always known until site investigations or intrusive surveys take place.

OPPORTUNITIES:

- Monitoring and technology enhancements may reduce impacts on the local built environment; e.g. reduced pollution from electric vehicles.

- Further enhancement in policies across the UK towards national parks and conservation areas will promote greater protections.

THREATS:

- Increased visitor numbers to rural and protected areas could damage the local built environment.
- Infrastructure changes may damage the built and historic environment; e.g. visual impacts of infrastructure changes in historic built environment.
- Uncertainty around mitigation costs until assets are uncovered.

Macro-Economic Issues

ECONOMIC OUTPUT

3.58 The Office for National Statistics (ONS) defines Gross Value Added (GVA) as a measure of the contribution to the economy of each individual producer, industry or sector[78]. Simplistically it is the value of the amount of goods and services produced, less the cost of all inputs and raw materials that are directly attributable to that production.

3.59 GVA data from ONS is available for local level geographies. Within West Sussex, at the ITL3[79] level GVA has been consistently higher in the north east of West Sussex than in the south west. Figure 3 in Appendix A shows that in 2019, GVA was measured at £13.04m for West Sussex (north east), as opposed to £11.17m for West Sussex (south west), which is understood to be primarily due to be presence of Gatwick Airport being the key economic driver for that sub-region. The gap in performance between the north east and south west areas of West Sussex has been slightly increasing in recent years.

PRODUCTIVITY

3.60 Economic productivity is defined as the ratio between output and input. Increasing productivity means greater efficiency in producing output of goods and services from labour, capital, materials and any other necessary inputs[80]. Although GVA per head of population is not a specific measure of productivity as it does not take into account hours worked or output per filled job, it is a useful measure of the wider economic performance of areas relative to the size of the local population.

3.61 It can be seen in Figure 4 in Appendix A that GVA per head varied significantly across West Sussex in 2019 from £53.9k per head in Crawley to £15.2k across Arun. GVA per head was £28.0k for West

[78] ONS: Rural productivity and gross value added (GVA) (2021)

[79] ITL3 is the UK International Territorial Level 3 which is part of the domestic statistical classification framework established by the ONS following the UK leaving the EU and the European Statistical System. There are 2 ITL3 units covering West Sussex district and boroughs: West Sussex (South West) (Adur, Arun, Chichester and Worthing) and West Sussex (North East) (Crawley, Horsham and Mid Sussex).

[80] ONS: Productivity Handbook (2016)

Sussex as a whole, which was below the South East and England averages of £31.8k and £30.2k respectively.

3.62 The key transport corridors and nodes in West Sussex are believed to be vital to economic performance as they affect connectivity between places of economic activity. The strongest transport links in West Sussex are the international air links via Gatwick Airport, and the proximity and direct A23/M23 road and Brighton Main Line rail connections between Brighton, Mid Sussex, Horsham, Crawley, Gatwick Airport, Croydon and London. The presence of these strategic transport connections corresponds with the stronger economic performance of these parts of West Sussex. East – west transport links such as the A27 and West Coastway Line in the coastal West Sussex sub-region correspond with poorer economic performance.

3.63 The economic performance of different parts of the County affects the degree of movement of people (e.g. commuting, business and tourism) and goods which depend on a functioning transport network. Accommodating movement of people and goods to support economic activity and raise economic performance is areas that do not perform well is a key driver behind the need to improve connectivity which the Transport Plan will need to respond to.

EMPLOYMENT

3.64 The economically active are defined as those residents who are either in employment or are unemployed and looking for and available to work. The employment rate is those people in employment, including employees and self-employed, expressed as a percentage of all people, or all people in that specific age band. Table 2 in Appendix A shows that the 2020 employment rate in West Sussex was higher than the regional and national average at 79.7% of 16-64 year olds, compared to 78.3% for the South East and 75.7% for England. The 2020 employment rate for West Sussex was highest in Adur (84.9%) and lowest in Chichester (74.0%)[81].

3.65 The unemployment rate is those who are unemployed expressed as a percentage of the economically active population. The unemployment measure (International Labour Organisation definition[82]) is based on a quarterly sample survey of households undertaken by the Office for National Statistics (ONS) as part of the Annual Population Survey (APS). However, as the unemployed form a small percentage of the population, the figures reported here are model based estimates. Figure 5 in Appendix A shows that in 2020 the highest unemployment rates for 16-64 year olds across West Sussex were in Crawley (4.6%), Worthing

[81] Data extracted from nowisweb in Nov 2021 from the quarterly Annual Population Survey– using data for the year Jan – Dec 2020 (this is affected by COVID-19). The survey is a sample survey of households and subject to sampling issues because of the low numbers sampled.

[82] People without a job, having been actively seeking work in the past four weeks and available to start work in the next two weeks, or people out of work but who have found a job and are waiting to start work in the next two weeks; ONS: A guide to labour market statistics (2020)

(4.3%) and Arun (4.1%) whereas Mid Sussex had the lowest unemployment rate (2.8%). The unemployment rate in West Sussex at 2.8% is lower than that for the South East at 4.0% and for England at 4.7%. It should be noted that unemployment and the claimant count increased significantly following the first COVID-19 pandemic lockdown in March 2020.

3.66 The transport network has an important role to play in enabling people to access employment, both to find jobs and to stay in work. Evidence on the specific role of transport as a factor for the areas with the highest unemployment rates in West Sussex is not available, however national research has highlighted that there is an important link in the provision of public transport services supporting jobseekers get back into work. 77% of jobseekers in British cities outside London have been identified in research as not having access to a car, van or motorbike with 60% of jobseekers in British cities reporting that they would have less chance of finding a job without a bus service[83]. Factors such as the cost of public transport fares, and the availability and timing of services to specific employment opportunities have also been identified as important.

3.67 The higher unemployment rates found in Crawley and Arun reflect some of the wider economic issues affecting West Sussex discussed throughout this section. This includes the skills gap for some job opportunities in Crawley between qualification levels and job opportunities on offer which presents particular demand for in-commuting to Crawley Borough which the transport network needs to cater for. There are also challenges with regard to the differing economic performance of coastal districts and boroughs as opposed to Mid Sussex, Crawley and Horsham. In terms of the transport network, businesses in coastal West Sussex area have been found to be more likely than businesses in other areas of West Sussex to identify that local transport options need improving[84].

SKILLS

3.68 The ONS Annual Population Survey (APS) provides information on the qualification attainment levels held by the resident population aged 16-64. As shown in Figure 6 in Appendix A, in 2020, 40.5% of West Sussex residents were recorded as attaining a level 4 qualification (degree level or above). Worthing (36%) and Crawley (30.6%) had the lowest recorded proportion of residents attaining a level 4 qualification, while Horsham (45.8%) and Mid Sussex (52.6%) recorded the highest attainment levels. It is noted that the APS is a sample survey, and figures are indicative trends only. Qualification attainment levels have been rising across West Sussex and the South East over recent years, with the West Sussex level 4 attainment level rising from 26.1% in 2004.

3.69 The APS also provides information on the occupational breakdown of employees. As shown in Table 3 in Appendix A, there is a higher proportion of residents in higher level occupations in Mid Sussex,

[83] Pteg: Ticket to Thrive: The role of urban public transport in tackling unemployment (2015)

[84] Greater Brighton City Region Partnership, WSCC and the Coast to Capital LEP: Greater Brighton and West Sussex Business Survey 2014

Horsham and Chichester, and a lower proportion across Crawley, Worthing and Arun.

Macro-Economic Issues SWOT Analysis

STRENGTHS:

- The West Sussex economy pre COVID-19 was generally diverse and performing strongly against the national average although with significant variation across the County.
- Employment rates exceeding the regional and national averages.
- Rising educational attainment levels across West Sussex.
- Gatwick Airport provides international links supporting the economy.
- Strategic road and rail transport links between Gatwick Diamond and Brighton, Croydon and London support the economic performance of Crawley, Mid Sussex and Horsham.

WEAKNESSES:

- Workforce skills deficit in some parts of the County, in particular Crawley which is dependent on in-commuting.
- Variable economic performance across parts of the County, with the north-east outperforming the south-west of the County.
- Weaker transport links across coastal West Sussex hindering economic performance.
- Dependency of car access in some parts of the County hindering access to employment opportunities, contributing to unemployment.

OPPORTUNITIES:

- Potential for strategic transport infrastructure improvements to boost economic performance, in particular for coastal West Sussex, for example strategic road network and rail improvements.
- Opportunities to invest in transport infrastructure seen as key to supporting economic growth.
- Importance of improving sustainable transport seen as key to national Clean Growth Strategy with potential associated funding opportunities.
- West Sussex Economy Reset Plan highlighting focus on strategic and local transport investments to support economic recovery from COVID-19.

THREATS:

- COVID-19 pandemic impacts on the economy, in particular Gatwick Airport and supporting industries, as well as leisure and tourism sector.
- Changes to international trading relationships and flows of people and goods on the transport network following exit from the European Union.

Economic sector transport issues

BUSINESS SECTORS IN WEST SUSSEX

3.70 Information on business sectors is provided by ONS using information from the Inter Departmental Business Register. The make-up of the business base in West Sussex is similar to that of the region, although there are some significant variations within the County.

3.71 Table 4 in Appendix A shows that the top 4 business sectors in West Sussex in 2020 were professional, scientific and technical (16.7% of businesses), construction (12.7%), business administration and support services (8.9%), and retail (8.9%).

BUSINESS SECTORS ACROSS WEST SUSSEX DISTRICTS AND BOROUGHS

3.72 As shown in Appendix A Table 4, the greatest dominance of professional, scientific and technical businesses across West Sussex is in the Districts of Mid Sussex and Horsham. Across Adur and Arun, construction businesses dominate the breakdown of businesses, while there is a greater dominance of business administration and support services, and information and communication businesses across Crawley, Horsham, Mid Sussex and Worthing. The greatest dominance of agriculture, forestry and fishing businesses are across the rural districts of Chichester and Horsham, while Worthing and Arun have the greatest proportions of accommodation and food services businesses, reflecting the number of leisure and tourism related businesses in these areas.

EMPLOYMENT ACROSS WEST SUSSEX DISTRICT AND BOROUGHS

3.73 Businesses also have differences in terms of the number of jobs that they provide. Information on employment by sectors is provided through the Business Register and Employment Survey (BRES)[85]. Appendix A Table 5 shows that in 2020 the top 3 employment sectors across West Sussex were 'health' (13.2%), 'retail' (10.3% of employees), and 'business administration and support services' (8.9%).

3.74 'Health' was the most dominant employment sector in Worthing by far (29.8% of employees) as well as in Mid Sussex (13.8%) and Chichester (13.3%), reflecting the presence of public sector organisations in these areas. In Crawley there was a strong dominance of transportation and storage (inc. postal) employees (26.1%) reflecting the presence of Gatwick Airport. The growth of logistics centres around Gatwick has been identified as potentially displacing higher value employment users[86].

3.75 In Adur the 'retail' employment sector was the most dominant (11.9%), while in Arun, this sector recorded an equal share of employment along with 'health' (14.9%) as the two most dominant employment sectors. In

[85] Employment figures for agriculture are excluded, as they are not fully covered by the BRES.

[86] WSCC (Regeneris): West Sussex Economic Growth Plan: Evidence Base and SWOT (accessed Feb 2021) (2018)

Horsham equal shares of employment across the 'retail', 'professional, scientific and technical', 'business administration and support services', 'education' and 'health' (8.9% each). 'Manufacturing' saw its greatest proportion of employment in Adur District (10.7%), while 'accommodation and food services' reported its greatest proportion of employment across Arun District (12.8%).

BUSINESS PERFORMANCE AND EMPLOYMENT CHARACTERISTICS ACROSS WEST SUSSEX ECONOMIC SUB-REGIONS

3.76 Business performance and employment characteristics across West Sussex have also been considered as part of the Regeneris evidence base and SWOT report for the West Sussex Economic Growth Plan[87]. This includes consideration of information at the economic sub-region level within West Sussex for the Gatwick Diamond, Coastal West Sussex and Rural West Sussex economic areas[88]. Analysis has considered the number of employees, the specialisation index[89] and the employment change between 2010 and 2015.

Gatwick Diamond

3.77 The Gatwick Diamond area was revealed to have a particularly strong representation in transport and storage (SI = 2.4), while there is also strong representation in business admin (SI = 1.4). The area has seen strong growth between 2010 and 2015 across most sectors, but with wholesale trade (23%), information and communication (18%) and accommodation and food (16%) showing the strongest levels of growth.

Coastal West Sussex

3.78 The coastal West Sussex area was revealed to have a similar sector employment composition to West Sussex as a whole, with the exception of larger education and health sectors (9% and 16% respectively). The most over-represented sectors in coastal West Sussex were identified as health and retail (SI = 1.3) and manufacturing, public admin and arts (all with SI = 1.1). The fastest growing sectors in the area between 2010 and 2015 were business admin (22%), property (20%) and the arts, entertainment and recreation sector (18%).

Rural West Sussex

3.79 The rural West Sussex area was revealed as being similar to that of coastal West Sussex with a third of total employment in rural West

[87] Ibid; This report was prepared to inform the Economic Growth Plan 2018-2023 which has been updated by the Economy Reset Plan 2020.

[88] For the purposes of analysis it is understood that the Regeneris report has used the following spatial definitions with some double counting across spatial areas: Gatwick Diamond - Crawley Borough, Horsham and Mid Sussex Districts; Coastal West Sussex – Adur, Arun and Chichester District and Worthing Borough; and Rural West Sussex – Chichester, Horsham and Mid Sussex.

[89] Also known as location quotient, a metric that measures the level of concentration in an industry relative to the nation's performance. A SI greater than 1 shows that the sector in West Sussex is over-represented compared to England and a SI less than 1 shows that it is under-represented.

Sussex within health (12%), education (10%) and retail (10%). However, rural West Sussex has seen some strong growth in traditionally under-represented sectors. Professional services (with an SI of 0.9%) has grown by 20% from 2010-2015, business services (with an SI of 0.4) has grown by 18%, whilst information and communications has grown by 195 (SI = 1.0). The area is over-represented in property / real estate (SI = 2), wholesale (SI = 1.6), and art, entertainment and recreation (SI = 1.3).

3.80 Although there are limitations to the way BRES data is collected for horticulture and land-based sectors, and therefore data for this sector is limited, these sectors are also understood to have a significant role in rural parts of West Sussex.

Sub-sector analysis

3.81 The Regeneris West Sussex Economic Growth Plan evidence base report also reviewed employment levels and growth and Index of Specialisation information for dominant business sectors across West Sussex. Key themes included:

- Concentration of med-tech and life sciences industries around Crawley and Horsham and the north east of the County, as well as Worthing.
- Concentration of financial and business services employment in Horsham, Chichester and Crawley.
- A concentration of digital technology jobs in Crawley.
- A concentration of holiday and short stay accommodation employment in Arun, and a significant concentration of hotel employment in Crawley associated with Gatwick Airport, but also significant employment in Arun, Chichester and Mid Sussex.
- A large volume of jobs in the restaurant and mobile food services activities sector.
- A large concentration of logistics and warehousing as well as air passenger sector employment in Crawley.
- Specialist wholesale is an important sector spread across the county.
- Food and drink as an important sector, in particular processing and preserving fruit and vegetables across Chichester District.
- Higher concentrations in residential care employment across Arun, Horsham and Worthing, which is expected to increase significantly with an ageing population.

Business and employment sector variations across West Sussex and implications for transport planning

3.82 The different characteristics of business and employment sectors across the County has different implications for the transport system influencing their location requirements and impacts on the transport system. For example, the requirements of agricultural and construction industries are very different to the needs of professional, business administration, information and communication related sectors.

3.83 In terms of movement of goods and employee access, agricultural industries which are shown above to be more prevalent across rural West Sussex and construction industries which are shown to be more prevalent across coastal West Sussex (Adur, Arun and Worthing), typically require high volume freight movements. These are typically located in rural and out of town dispersed locations, requiring good road transport access. This compares to professional, business administration, information and communication related sectors that are found to be more prevalent across Crawley, Horsham and Mid Sussex which require high quality digital connectivity and which can be located closer to town centres with good public transport links for employee access.

3.84 The Regeneris West Sussex Economic Growth Plan evidence base report has highlighted the following transport infrastructure issues from its evidence gathering work:

- Significant pressure on the County's only two trunk roads, notably the A27 east west connection and the M23/A23 corridor, with junction access to the M23 also identified as potentially limiting development in some parts of the north east of the county. Poor performance on the trunk road network causes traffic to divert onto less suitable local routes.
- Regular congestion on the local road network, in particular at junctions, on the A22, A23, A2300, A264, A24 and A259.
- Local public transport does not always meet expectations, in particular hindering rural access to key services and employment.
- A significant proportion of trips on the A27 are identified as 'local' so there is potential to accommodate at least some of these trips using sustainable modes of transport.

3.85 Opportunities to better connect key residential and employment locations to the strategic public transport network, for example there are opportunities to improve public transport connections from Gatwick Airport railway station to strategic employment sites. In summary, the WSTP needs to respond to the needs of these different business and employment sectors.

The sharing economy and implications for transport

3.86 In 2014 the Government commissioned independent review into the sharing economy in the UK reported PwC research that estimated this to be worth £500m and forecast to grow to be worth £9bn by 2025[90]. This review defines the sharing economy as online platforms that help people share access to assets, resources, time and skills. This can include platforms such as Airbnb at the global scale, to sharing platforms within local communities. The sharing economy opens up specific opportunities in relation to transport which are relevant to the WSTP review. These include:

[90] Wosskow, D.: Unlocking the sharing economy: An independent review (2014)

- The growth in property owners in the UK renting out their driveways through the JustPark app which in 2020 serves 3.5m drivers parking across 45,000 locations throughout the country[91].
- People renting their own cars through apps such as Turo.
- Car Share platforms such as liftshare which operates West Sussex Car Share.
- Car Clubs such as Co-Wheels at Chichester and Horsham in West Sussex.
- Opportunities for public bodies to share their vehicles with the public when not otherwise in user.
- Opportunities for shared office space/hubs for people who predominantly work from home.

Economic Sector Transport Issues SWOT Analysis

STRENGTHS

- Dominance of professional, business, administration, information and communication related sectors found to be more prevalent across the Gatwick Diamond with greatest opportunities for employee access by public transport.

WEAKNESSES:

- Agricultural and construction industries more dominant in rural and coastal parts of the County, with greater dependence on freight movements, but in areas of the County with lower standard road connections.
- Pressures from leisure and tourism sector in rural and coastal areas with lower standard transport connections.

OPPORTUNITIES

- Potential to encourage high value business to locate and grow in the County through a network of high-quality and well-connected employment sites.
- Dominance of professional, business, administration, information and communication related sectors found to be more prevalent across the Gatwick Diamond with greatest opportunities for employee access by public transport.

THREATS

- Growth of the logistics sector around Gatwick potentially displacing higher value employment uses.
- Impacts of COVID-19 on economy, in particular Gatwick Airport and supporting industries, as well as leisure and tourism sector.

[91] About JustPark (accessed Oct 2021)

Development and Regeneration Transport Issues

TOWN CENTRES

3.87 The Regeneris West Sussex Economic Growth Plan evidence base report has also highlighted the important role that town centres and market towns have to play in economic well-being and growth. These centres have advantages in terms of their strong transport links, and their concentration of retail and leisure activity and amenities which should make them strong locations for businesses, residents and visitors. However, town centres are faced with the challenge of maintaining their active day time population with the growth in online retail, exacerbated by the impact of the COVID-19 pandemic on people visiting the town centres for shopping and leisure.

3.88 The County Council has been working with District and Borough Councils to agree priority locations for development and investment through Growth Deals and in some cases as part of the One Public Estate Programme. One Public Estate is a national programme jointly managed by the Cabinet Office and the Local Government Association, that brings public sector organisations together to consider how land and buildings can be used collaboratively to improve public services, renew and rationalise the public estate, free up land for redevelopment, support local economic growth and generate capital receipts and income.

3.89 Growth Deal town centre regeneration projects are currently being delivered in Burgess Hill, Chichester, Crawley, Bognor Regis and Worthing. These include investment in public realm improvements, schemes that enhance sustainable connectivity and redevelopment of council-owned land. Plans are also progressing in Horsham, Littlehampton and Shoreham that propose to bring forward projects in the early part of the plan period, in line with the delivery plans within the growth deals.

3.90 There are understood to be a number of transport considerations that the Transport Plan will need to consider with regard to town centres and retail. These include town centre ease of access, the quality of public space and the impacts of transport infrastructure on this space, the provision and cost of car parking, and the different businesses that can be supported by different modes of access to town centres.

ECONOMIC IMPACTS OF THE COVID-19 PANDEMIC

3.91 The County Council has monitored the impact of COVID-19 on the West Sussex Economy through monthly snapshot reports, the last of which was published in Dec 2021[92]. The key headlines from the latest and previous reports are that:

- Crawley had the highest number of furloughed employees and the highest take-up rate throughout the scheme, whilst Adur recorded the lowest number of furloughed employees.

[92] The County Council's Insight and Economy teams have produced monthly 'snapshots' on the impact of COVID-19 on the West Sussex economy (accessed Mar 2022).

- The number of furloughed employees and take-up rates in West Sussex both peaked in July 2020.
- At the peak, Crawley recorded the highest take up rate and number of furloughed employees at 25,800 representing around 41% of working residents in Crawley aged 16+. Crawley had one of the highest take up rates in the country.
- The number of furloughed employees across Arun District was also high at 23,000 (33% of working residents) in July 2020.
- The take up rate of the Self-Employment Income Support Scheme in West Sussex (i.e. the numbers of claims made against the total potentially eligible population) was recorded at 76% in July 2020 and was in line with the regional average.
- Adur, Crawley and Worthing recorded the highest take up rate for the Self-Employment Income Support Scheme in West Sussex each at 79% (based on claims to Oct 2021).

3.92 From research and estimates of impact by various organisations and from the County Council's own collation of intelligence from across the County including the monthly snapshot reports, key messages about impacts include:

- The retail, hospitality, aviation and leisure sectors have been the most vulnerable to the impacts of the COVID-19 pandemic, all sectors which are key to the West Sussex economy.
- Crawley has been one of the most impacted area in West Sussex in terms of jobs affected and is one of the most affected areas in the country.
- There are signs of recovery in the West Sussex economy, with reductions in the unemployment claimant count since start of the pandemic, an increase in job postings, and growth in the number of new business incorporations in West Sussex.

DEVELOPMENT AND REGENERATION

3.93 The Local Plans in West Sussex are at different stages of preparation as shown in Table 6 in Appendix A. Sites for over 76,000 new homes are allocated in adopted Local Plans across West Sussex from the early 2010s through to the early 2030s, with additional homes to be allocated in updated Local Plans currently being prepared. The WSTP should have regard to emerging Local Plans on the basis that these are still subject to change before adoption.

3.94 With regard to the transport mitigation packages identified within each Local Plan, most of interventions within these packages are expected to bring benefits to users of the existing transport network. Development mitigation is not intended to address all long-standing transport issues and gaps in the local transport network, so additional funding will be required to develop solutions to these issues. Therefore, not all of the packages of interventions are fully funded by development contributions specifically and there may be a strategic case for other funding allocations to support these projects.

3.95 In addition to the Local Plans listed in Table 6 in Appendix A, West Sussex also has adopted Waste and Minerals Local Plans that identify sites for waste and mineral developments that may need to be taken into account in the design of transport network improvements.

3.96 In addition to the sites for new homes within West Sussex, new housing in the bordering authorities may also have an impact on transport within West Sussex in particular from sites close to the county boundary.

Development and Regeneration Transport Issues SWOT Analysis

STRENGTHS:

- Regeneration of key town centre sites for employment and housing identified in Local Plans and Growth Deals with good sustainable transport links which minimise impact on the transport network and encourage sustainable travel behaviour.
- Local Plans recognise the importance of developments being located to minimise the need to travel and to provide sustainable transport connectivity.
- Local Plans ensure that developments must mitigate their impacts on the transport network by providing suitable mitigation, i.e. improved capacity road junctions, public transport and walking and cycling connections.

WEAKNESSES:

- Development not able to address all long-standing local issues with the transport network.
- Development sites allocated in existing Local Plans and potential additional edge of town development sites not well located to access employment opportunities which may lead to commuting.
- Minerals can only be worked where they are found and are not always located close to the lorry route network with limited opportunities to be served by rail.

OPPORTUNITIES:

- Potential to use development to fund local and strategic improvements to the transport network, i.e. new road, new rail station or strategic cycle connections.
- Opportunities to boost electric vehicle use through the incorporation of charging facilities into new developments.

THREATS

- Edge of town developments can be difficult to connect to key service and employment centres and transport hubs.
- Development related pressure on road network junctions.
- Planned capacity improvements to mitigate development could lead to induced traffic growth.

- Minerals and waste sites in dispersed locations with potential for HGV impacts on local and rural communications.
- Parking and air quality impacts from developments.

Demographic Change & Accessibility

DEMOGRAPHIC CHANGE

3.97 Population projections from the Office of National Statistics (ONS) show that the overall population of West Sussex will increase over the next two decades. The population proportion of the age groups 0-14, 15-64 and 65+ are subject to change within that period. As shown in Appendix A Table 7, the proportion of people aged 65+ is expected to increase by 50.8% over the period 2018 to 2043, while there is expected to be a slight reduction in the proportion of 0 to 14 year olds of 1.7%, and a modest increase in the population aged 15-64 of 3.5%

AGEING POPULATION

3.98 As a result of the growing and ageing population, the total number of dementia cases in West Sussex is forecast[93] to rise from 17650 in 2020 to 22450 in 2030, which is a 27% increase. Getting out and about with dementia (depending on the type and severity) can be affected by the surrounding environment and the ease of using transport. For example, older people with dementia tend to use landmarks and other visual cues rather than maps and written directions as wayfinding techniques. Wide pavements, good visual access, varied urban features or distinctive landmarks, quiet - pedestrianised streets, explicit signs with unambiguous graphics, street furniture in styles familiar and plain, non-slip, non-reflective paving all help to make a street dementia-friendly. Dementia-friendly neighbourhoods are places that are familiar, legible, distinctive, accessible, comfortable and safe.

YOUNG PEOPLE

3.99 The transport needs of young people can vary greatly depending on the specific age group. For example, a child under the age of 5 may be going to childcare either within walking distance of the home or close to workplace of the parent/carer. Primary school age children may wish to walk or scoot to school. For some of this group, the local streets will probably be used for regular trips.

3.100 Secondary school age children are more likely to be cycling and this group can be seen as particularly vulnerable in terms of road safety because they are becoming more independent and increasingly travelling to activities on their own.

3.101 Finally, young adults who are at college or training in their first jobs will have different transport needs. Some young people will need to travel far to get to specialist colleges or universities and affordability of public

[93] WSCC and NHW West Sussex Clinical Commissioning Group: West Sussex Joint Dementia Strategy 2020 to 2023 (2020)

transport can be an issue. If transport is unaffordable, then social isolation could be a problem.

ACCESSIBILITY

3.102 As shown in Appendix A Table 8, compared to other regions in England, the South East has one of the highest average journey times to get to places with more than 5000 jobs, by car. It also has the joint highest average journey time to get to hospital, by car. The South East region also has one of the highest average journey times to get to primary school, by cycle (Table 9 Appendix A) and one of the highest average journey times to get to both primary and secondary schools, by public transport and walking (Table 10 Appendix A).

3.103 In 2016, the County Council analysed public transport accessibility (based on January 2016 AM peak timetables and using 2014 population estimates) to main service centres (i.e. towns) and concluded that 83% of the population was within 30 minutes and 93% of the population was within 60 minutes of a main service centre by walking cycling or public transport. An accessibility map showing the areas with access to a main service centre is included as Figure 7 in Appendix A.

3.104 Generally speaking, there is limited reference to the role of transport as a determinant of health and its impact on inequalities. This is set out in The Marmot Review 10 Years On Report[94]and the Marmot Review Fair Society, Healthy Lives[95] - having access to transport enables access to work, education, social networks and services that improve people's opportunities and overall community functioning, and conversely, not having good transport access increases inequalities in a range of the social determinants of health.

3.105 The Equalities Impact Assessment (EqIA)[96] prepared alongside this evidence base has highlighted some of the accessibility challenges for different people, including highlighting the importance of public transport options for young people's access to educational and employment opportunities, but also for older people who may experience an increased reliance on public or community transport in later life. The design of public transport and digitisation of information can also present public transport access challenges for people with disabilities.

3.106 The EqIA also highlights some of the access barriers and challenges for people presented by the design of streets. For example, the absence of easily accessible and well-maintained pavements or crossing infrastructure can present barriers for people with disabilities, older people, and pregnant people or parents with young children. Furthermore, the EqIA has also highlighted some of the accessibility challenges for people related to fear of crime and discrimination across the different protected characteristics of gender, disability, religion or belief and sexual orientation.

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[94] The Health Foundation: Health Equity in England: The Marmot Review 10 Years On (2020)

[95] UK Parliament: Fair Society, Healthy Lives: The Marmot Review (201)

[96] WSCC: Local Transport Plan WSTP4 Sustainability Appraisal (2022)

AFFORDABILITY

3.107 In the responses to consultation on the 2018 Bus Strategy there was "slightly less support for affordable bus travel" than other priorities. However, 42% of respondents were aged 65 or older and 47% were free bus pass holders. Further analysis showed that "working with bus operators to provide affordable fares for younger people" was an important priority and "affordable fares for younger people and commuters" was ranked third in the number of times it was mentioned (it was commented on 98 times).

3.108 The Transport Planning Society's State of the Nations[97] report states that over the past 10 years, bus fares have increased by 54%, while rail fares have increased by 40% and motoring costs by 16%. For comparison, over that period the cost of living (retail price index) went up by 31% and wages by 19%. This shows that public transport fares have increased by more than inflation, whereas motoring costs have reduced in real terms. Some put this down to Government policy; fuel duty has not increased over the last 10 years, whereas rail fares have been subject to above inflation increases.

HARD TO REACH GROUPS

3.109 Hard-to-reach groups are groups or sections of society who are underrepresented or are less able to get involved in the planning process. There are considerations in regard to challenges that hard-to-reach groups might face in accessing and using transport, but also the way that groups can have their voice heard about issues.

Demographic Change & Accessibility SWOT Analysis

STRENGTHS

- The highest proportions of older people in the largely urban coast where transport and services are generally accessible.
- The highest proportions of younger people are in Crawley and Mid Sussex where transport and education are generally accessible.
- Majority of the population live within a reasonable journey time of a main service centre.

WEAKNESSES:

- Gap in data and monitoring on different modal groups and their behaviours within West Sussex (e.g. female cyclists).
- There are pockets of people (e.g. older and younger people) living in typically rural areas where there are poor transport links.
- Public transport journey times in rural areas can be poor.
- Road conditions are often not conducive to active travel or using public transport.

[97] Transport Planning Society: State of the Nations: Transport planning for a sustainable future (2020)

- Parking is not always accessible for those who need to use a car.
- Public vehicles are not always suitable with space to store wheelchairs.

OPPORTUNITIES:

- Future technology could help to improve the quality of local bus and transport services.
- Potentially greater propensity for younger people to use future technology (including car sharing and hail riding).
- Vehicle automation could potentially improve travel options.
- Accessibility and health could be improved through integrating active travel routes into interlinking, multi-functional green and blue infrastructure.
- Targeted action could benefit people living on low incomes, e.g. considering accessibility and affordability of the bus network in areas of deprivation in West Sussex.
- Options to make facilities more appealing for all users (for example, making shared use paths safer for the visually impaired).

THREATS:

- Population of West Sussex increasing faster than the national rate.
- Demographic change leading to increasing costs without a commensurate increase in revenue will result in budget pressures.
- Future mobility services could threaten the viability of local bus services by abstracting passengers.
- In West Sussex, the number of people of the age 70 and over is projected to rise slightly faster than the national average which could mean increased isolation and reduced accessibility.
- Potential resistance to giving up private car ownership among older people.
- Affordability of public transport and competition from private vehicles.
- Centralisation of services resulting in an increase in travel times to education and health services.

Health and well-being issues

OBESITY

3.110 Obesity and poor diet are linked with type 2 diabetes, high blood pressure, high cholesterol and increased risk of respiratory, musculoskeletal and liver diseases. Obese people are also at increased risk of certain cancers, including being three times more likely to develop colon cancer[98]. There are a range of causal factors which can include travel choices.

[98] NHS: NHS Long Term Plan, Chapter 2: More NHS action on prevention and health inequalities: Obesity (2019)

3.111 NICE (The National Institute for Health and Care Excellence) have produced "guidelines on physical activity"[99] which include the full range of human movement, from active hobbies, walking, cycling and the other physical activities involved in daily living, such as walking upstairs, gardening and housework to competitive sport and exercise.

MENTAL HEALTH & WELL-BEING

3.112 The ONS (Office for National Statistics) have gathered data on estimates of life satisfaction[100], feeling that the things done in life are worthwhile, happiness and anxiety in Great Britain. Since January 2012; life satisfaction went down for the first time in 2019; feeling the things we do are worthwhile also went down for the first time in 2019; happiness did not go up (it stayed the same) for the first time in 2019; and anxiety was the highest it has been since 2013.

3.113 The causes of mental health difficulties can be complex and multi-faceted. Specific evidence on the role of transport and accessibility related issues and their contribution to mental health problems is limited. However, it is believed that the following issues relevant to the WSTP review are important:

- The ability for people to be able to easily access transport to access employment, education, services and leisure facilities and to visit friends and families. Poor accessibility can result in isolation and may lead to mental health problems;
- The design of streetscapes where people live and the influence of factors such as traffic volumes and noise, street lighting, and public realm, which can affect rest, relaxation and quality of sleep;
- The ability to have easy access to green and blue spaces and access to the countryside. Good walking and cycling access to green and blue spaces is believed to be important; and
- The amount and quality of time spent commuting.

3.114 Much of West Sussex is rural and the isolation that can occur (and its ensuing mental health effects) through lack of access to good quality and affordable transport is recognised as a concern.

Health and Well-being SWOT Analysis

STRENGTHS

- The quality of the West Sussex environment, including proximity of SDNP (South Downs National Park), AONB (Area of Outstanding Natural Beauty) and coastline makes active travel very attractive.

[99] NICE: Physical activity overview (accessed Jan 2021)

[100] ONS: Personal well-being estimates (2020)

WEAKNESSES

- Severance reduces access to areas that are good for exercise and leisure, such as the beach (incl. England Coast Path) and The Downs (incl. The South Downs Way).
- The Childhood Obesity Challenge Group have highlighted a gap in the amount of Bikeability Level 3 training supported.
- Noise levels near main roads can make active travel unpleasant and can have an impact on health and well-being in the home, particularly for those on lower incomes and/or in rural areas on HGV routes.
- Eleven air quality management areas exist.
- Automation of vehicles might lead to increased congestion encouraging people who did not drive before to drive.

OPPORTUNITIES

- Active travel presents opportunities to address physical and mental health issues.
- Government has a newly enhanced focus on reducing obesity levels which may open up new streams of funding.
- Opportunities for GP referrals to link to WSCC active travel and training schemes (e.g. adult and children cycle training) or air quality awareness programmes (airAlert app).
- Use of "quiet tarmac" on capital projects where this will deliver noise benefits.
- New mobility solutions present opportunities to reduce social isolation and improve health and well-being.

THREATS:

- Political and public acceptance of push towards active travel because of potential impacts on road space for vehicles.
- Micro-mobility such as electric scooters and bikes could reduce levels of physical activity through switching from non-electric models.
- Future mobility solutions could threaten local bus service viability.
- The number of dementia cases in West Sussex is likely to rise by 35% over the next decade.
- Long term effects of the COVID19 pandemic on attitudes to travel.

Transport Network Performance

ROAD NETWORK CLASSIFICATION

3.115 The National Strategic Road Network (SRN) comprised of motorways and trunk roads is managed by Highways England. In West Sussex this includes the M23, A23 and A27. The A27 is the only part of the National SRN running east – west south of the M25. Due to its location, it serves both a strategic role as well as being heavily used as a local distributor road with short trips and heavy cross flows at junctions.[101]

[101] Highways England: South Coast Central: Route Strategy (2015)

LOCAL ROAD NETWORK

3.116 The County Strategic Road Network includes motorways and trunk roads plus the most strategically important local roads and is shown as Figure 8 in Appendix A.

3.117 The County Council's carriageway assets are made up of 4,046km (2,514miles) of road of which approximately 831km (516miles) is classified A and B class, 7.5million sqm of footways, 726 road bridges, 34 subways and 60 footbridges.

PRIMARY ROUTE NETWORK

3.118 The Primary Route Network (PRN) designates roads between places of traffic importance across the UK, with the aim of providing easily identifiable routes to access the whole of the country. Primary routes are marked using green signs with white and yellow text.

3.119 The PRN is constructed from a series of locations (primary destinations) selected by the Department for Transport, which are then linked by roads (primary routes) selected by the local highway authority. The primary destinations in West Sussex are; Bognor Regis, Chichester, Crawley, East Grinstead, Gatwick Airport, Horsham and Worthing. In West Sussex the PRN currently includes M23, A23 (trunk road), A27 (trunk road), A22, A24 (from A27 northwards to Surrey County boundary), A259 (from A27 Chichester to A29 Bognor Regis), A264 (from A24 to M23 Pease Pottage), A264 (from M23 to A22), A272, A280 (from A24 Findon to A27 Patching) and A283 (from A24 Washington to A27 Shoreham). The PRN is shown as Figure 9 in Appendix A.

3.120 There are a number of differences between the County Strategic Road Network and the PRN. Some roads on the County Strategic Road Network are not on the PRN because they do not connect to primary destinations.

3.121 The PRN includes part of the A272 (between A24 and Hampshire County boundary) that is not on the County Strategic Road Network because the road is not suitable for the largest HGV traffic and passes through SDNP which is protected from development including road building. This has resulted in an approach to direction signing that is not compliant with standards as much of the A272 west of A24 in West Sussex is signed as a local road rather than as a primary route (i.e. green backed signs, yellow text).

MAJOR ROAD NETWORK

3.122 In 2018, the Government created a Major Road Network to complement the existing National SRN, made up of key Local Authority-managed roads. The criteria used to define the MRN are:

- Roads where traffic flow is greater than 20,000 vehicles per day (vpd);
- Roads where traffic flow is greater than 10,000vpd and in addition, the proportion of heavy goods vehicles (HGVs) or large goods vehicles (LGVs) on that section of road is greater than 5% or 15% respectively; and

- Any road section that falls close to several of the thresholds defined above is also eligible for inclusion.

3.123 The MRN in West Sussex (shown as Figure 10 in Appendix A) includes all or parts of the A22, A23, A24, A29, A259, A264, A270, A272, A280, A283, A284, A2011, A2032 and A2300. The MRN will be reviewed every five years in line with the investment planning cycle so consideration should be given to whether or not the County Council would like roads to be added or removed from the MRN in 2023.

LORRY ROUTE NETWORK

3.124 The Lorry Route Network as shown in Figure 11 in Appendix A identifies the roads that are recommended for use by lorries and heavy goods vehicles as, of the available roads, they are the most suitable for these types of vehicle. Historically the Lorry Route Network has defined 'strategic' and 'local' lorry routes, although this now has little influence on route choice due to the introduction of satellite navigation systems that do not recognise such a local distinction.

TRAVEL BEHAVIOUR

3.125 The most comprehensive set of information about the West Sussex community is the Census which includes information about travel to work within and beyond West Sussex. The most recent Census for which data is available was undertaken in 2011. This data is now nine years old and should be considered alongside other sources of information that may be more recent. The Census was last conducted in 2021 and the results are expected to be published in summer 2022 onwards, which will allow further analysis of travel behaviour to take place to inform implementation of the Transport Plan.

TRAVEL TO WORK PATTERNS

3.126 Chichester District and Crawley Borough are the only local authority areas within West Sussex which attract more people into their areas to work than there are residents who commute out, although Worthing Borough only has a slight difference between the levels of in and out commuters. Overall, in 2011, there were approximately 16,500 more residents who commuted out of West Sussex for work than people who commuted into West Sussex.[102]

3.127 The majority of the resident workforce travel to work within West Sussex and just over 60% of the resident workforce travel less than 20km but there are significant flows between West Sussex and neighbouring areas, notably Brighton & Hove, Portsmouth and central London.

3.128 Across West Sussex in 2011, 12.2% of the resident workforce worked mainly at or from home, but there was significant variation between districts. Crawley Borough had the lowest proportion of home working residents at 6.6% and Chichester District had the highest at 16.4%. There is also significant variation in home working between residents living in towns and rural areas. Generally, a higher proportion of

[102] WSCC: Census Bulletin: Travel to work in and beyond West Sussex (2013)

residents work from home in rural areas and this was highest in rural parts of Horsham and Mid Sussex at 17.3% of the resident workforce.

TRAVEL TO WORK MODE OF TRANSPORT

3.129 Across West Sussex in 2011, 58% of the resident workforce travelled to work by car or van as driver and a further 4.7% as a passenger. The proportion of the resident workforce walking to work was 9.7%, using the train 7.2%, bus 3.5% and 3% cycled. However, there is significant variation between districts as the proportion of the resident workforce who travel by train to work was 12.7% in Mid Sussex and only 3.9% in Adur District. There is also a significant variation in mode choice between residents living in towns and rural areas as the proportion travelling by car or van as driver was highest in rural part of Horsham District at 63.9% of the resident workforce and lowest in Haywards Heath at 48.8% of the resident workforce.

IMPACTS OF THE COVID19 PANDEMIC ON TRAVEL BEHAVIOUR

3.130 The COVID19 pandemic which began in late 2019 had a dramatic impact on travel behaviour in 2020 and 2021 due to a slowdown in economic activity, changing travel to work and leisure patterns. Travel patterns changed due to an increase in working and shopping from home, and requirements for social distancing in public places including on public transport.

3.131 At the peak of the first 'lockdown' in late April and early May 2020 compared to the equivalent week in 2019:

- Road traffic nationally fell to 38% of 2019 levels.
- Passenger numbers on national rail services fell to 4% of 2019 levels.
- Passenger numbers on bus services (excluding London) fell to around 11% of the equivalent week in 2019.
- Cycling levels more than doubled compared to 2019[103].

3.132 Passenger numbers at Gatwick Airport fell dramatically and over 90% of eligible staff were placed on the Government's Job Retention Scheme. Gatwick Airport Ltd estimate that recovery of passenger numbers to pre-COVID19 levels might take up to four years.[104]

3.133 Following the end of the first national lockdown by end of July 2020 compared to the equivalent week in 2019:

- Road traffic nationally had recovered to around 96% of 2019 levels.
- Rail passenger numbers had recovered to around 30% of 2019 levels.
- Bus passenger numbers had recovered to around 37% of 2019 levels.
- Cycling levels had reduced from the high peak but remained higher than in 2019[105].

[103] DfT: Transport use during the coronavirus (COVID-19) pandemic (2020)

[104] Stewart Wingate letter to stakeholders June 2020

[105] DfT: Transport use during the coronavirus (COVID-19) pandemic (2020)

3.134 The changes in travel behaviour are complex; resulting from the interactions between economic performance, capability to work from home, leisure patterns, the impacts of Government support programmes, transport capacity, and individual choices about travel behaviour. TfSE explored these relationships and the key conclusions of this work are that:

- Economic output (GVA) in the South East is likely to be £10-18bn lower and unemployment up to 18% higher than TfSE's preferred scenario (as set out in the Transport Strategy for the South East) and economic recovery will take years rather than months.
- Strategic infrastructure planning should consider not only the likely and forecast impacts of planned development from Local Plans also potentially different patterns of development and travel behaviour.
- It is possible that through changing travel patterns that demand for travel could spread to outside the traditional peak periods and move away from some of the most congested regional 'radial' routes to London.
- Investment in digital technology has the potential to facilitate economic resilience and recovery, as partially evidenced from increased levels of home-working and remote access to services and amenities.
- Increased home-working may reduce trip-chaining, for example, combining a commute trip with a school drop-off or grocery shop – these and other trips still need to be made [also, with a car more likely to be available at or near home most of the day, household members may make more trips by car].
- Although an increase in car mode share has been forecast, this is forecast to be offset by 14% to 39% fewer commuting trips by the end of three years at a region-wide level.
- With more dispersed patterns of travel temporally and spatially, it may be harder to accommodate these travel patterns by frequent, fixed-route public transport.

3.135 It is clear based on the work undertaken by TfSE, that there is considerable uncertainty about the impacts of the COVID19 pandemic on long-term travel behaviour. For the purposes of the review of the Transport Plan, it is necessary to take account of the uncertainty relating to traffic forecasts and the range of possible scenarios due to the pandemic.

VEHICLE OWNERSHIP

3.136 Based on West Sussex Census analysis, the number of cars or vans increased between 2001 and 2011 by 13% to 412,871. Over the same period the number of households increased by 8% to 345,614 in 2011. The percentage of households with no or one car or van declined from

19% to 18% whilst the proportion of households with two or more cars or vans increased from 37% to 39%.[106]

3.137 The number of vehicles registered has increased year on year since 2010 when there were 490,800 vehicles in West Sussex[107]. In 2020, there were a total of 563,700 vehicles registered in West Sussex of which 471,500 were cars, including 152,000 diesel cars but only 1,593 electric vehicles[108].

ROAD TRAFFIC

3.138 Since 2010, traffic levels in West Sussex have increased overall but with some variation between years. The pattern of traffic growth broadly mirrors the national trend over the same time period. However, as shown in Table 11 in Appendix A the increase in traffic volume is not the same at every screenline/cordon as those near or surrounding main towns (e.g. Bognor Regis) have seen the biggest indexed increase in traffic. The lowest indexed increases between 2010-2019 were in rural locations (e.g. Northwest screenline).

3.139 Traffic levels in 2020 were significantly affected by the COVID-19 pandemic. Table 11 in Appendix A shows that traffic levels at every screenline/cordon was lower in 2020 compared to 2019. DfT estimate that in 2019, 4.87 billion vehicle miles were travelled on roads in West Sussex and in 2020, this reduced to 3.86 billion vehicle miles[109].

TRAFFIC FORECASTS

3.140 The DfT published new Road Traffic Forecasts[110] in 2018 (RTF2018) covering the period up to 2050. Forecasting the future is complicated and historically traffic growth has tended to vary from forecasts due to uncertainty about the factors that influence travel behaviour. Traffic growth varies due to a range of factors such as population growth, trip rates, economic prosperity and the cost of driving. To address this issue, RTF2018 includes seven different potential scenarios based on different assumptions. However, it should be noted that these forecasts do not take the effects of the COVID-19 pandemic into account so should now be considered in light of the potential short and long-term impacts of the pandemic on travel behaviour as outlined above.

3.141 In RTF2018, traffic was forecast to increase in all scenarios with growth levels ranging from 17% and 51% between 2015-2050. Traffic growth on the National Strategic Road Network was expected to range between 29% and 59% between 2015 and 2050 driven by forecast increases in the number of car trips and trip distances, plus Light Goods Vehicles Traffic. Forecast growth on principal roads and minor roads which make

[106] WSCC: Census Bulletin: Travel to work and car or van ownership in West Sussex (2013)

[107] DfT: Vehicle Licensing Statistics table VEH0105

[108] WSCC: Electric Vehicle Strategy (2019)

[109] DfT: Road traffic statistics: local authority West Sussex (2020)

[110] DfT: Road Traffic Forecasts 2018

up the majority of the local highway network in West Sussex was between 10%-44% and 11%-48% respectively.

3.142 The NHT survey 2020[111] indicates that public perception of 'traffic levels and congestion' in West Sussex is lower than other aspects of highways and transport (second lowest scoring indicator in 2020) and other counties (ranked 27 out of 29 in peer group) and on a declining trajectory since 2011.

CONGESTION

3.143 Traffic flow exceeding capacity results in congestion causing delays for road users which can lead to behavioural responses including rerouting, retiming journeys or choosing to travel by another mode of transport. Delays can cause productivity issues for businesses due to lost time and missed appointments and poor connectivity to customers and labour. Some of the behavioural responses to congestion can have negative impacts on communities and businesses leading to concerns about 'rat-running' and environmental impacts on less suitable routes and peak-spreading; i.e. peak periods starting earlier and ending later. Congestion can also make conditions for walking, cycling and using public transport less attractive.

3.144 Based on DfT travel time data shown in Table 12 in Appendix A, average delay on West Sussex 'A' class roads has slightly worsened between 2015-19 in line with the national and south east trend. In 2020, there was a significant reduction in average delay largely due to the effects of the COVID-19 pandemic. As shown in Table 13, in 2021, average delay continued to be lower than the national and South East regional trend and all but one neighbouring local authority.

3.145 A class road performance has been analysed using Highway Analyst which includes journey time data. The analysis shows that the performance on different A class roads in West Sussex varies and is shown in Table 14 in Appendix A. The top ten worst A class roads in the County based on delay time are (in ranked order); A259, A27, A272, A29, A286, A283, A273, A24, A264 and A281. The best performing A class roads in the County based on delay time are (in ranked order); A2037, A287, A270, A2300, A284, A2219, A2031, A2025, A280, A2004.

3.146 The countywide situation masks a series of localised capacity 'pinchpoints' where congestion results in delays on local roads. The most significant pinchpoints on A class roads in the County are listed in Table 15 in Appendix A.

ROAD SAFETY

3.147 At a national level the number of people Killed or Seriously Injured (KSI) casualties has stagnated since 2010 across most of the UK. In 2010, a total of 25,457 KSI casualties were recorded compared to 27,266 in 2018. In part this may have been influenced by the adoption of a new national collision recording system called CRASH that more accurately classifies casualty severity. The national trend in the number of fatalities

[111] WSCC: draft 2020 NHT Survey summary report

has been broadly flat since 2010. In Great Britain, 1,784 people were killed in reported road traffic collisions in 2018 compared to 1,850 in 2010, a 3.5% reduction.

3.148 As shown in Table 16 in Appendix A, the trend in the number of KSI casualties in West Sussex has remained fairly flat since 2011 reflecting the national picture outlined above. In terms of total KSI casualties, the outturn in 2018 was higher than the 2005-2009 baseline average of 473. Child KSIs shown in Table 19 in Appendix A have also seen an increase over the 2005-2009 baseline in 2018; the figures have been fairly stable with anomalies in 2008 and 2012. At the same time, there has been an increase in population and traffic, but it appears likely that the milestones outlined in the Road Safety Framework 2016-26 will be missed.

3.149 To take account of changing traffic levels over time, the casualty rate is often used as a basis for reporting on road safety. While the number of KSI casualties has remained broadly similar, the estimated number of vehicle miles travelled shrunk slightly in 2018 and this has resulted in an increase in the number of KSI casualties per billion miles travelled from 102 in 2017 to 104 in 2018 as shown in Table 17 in Appendix A.

3.150 The Road Safety Framework identifies specific groups of road users and locations which allows road safety initiatives to be targeted to meet their specific needs. The Road Safety Framework will undergo its mid-term review in 2021 with a greater emphasis on expanding and embedding the Safe Systems approach to road safety and traffic management in all highway and transportation activities in West Sussex. The Safe System philosophy brings a public health type focus on road safety where efforts should primarily be made to address the harm that is being done. At the centre of this is human fallibility and the fact that errors at present can lead to unintentional death and injury. Movement should not be at the expense of human wellbeing.

FREIGHT

3.151 The efficient and safe movement of freight is vital to the success of the West Sussex economy. However, movement of freight by road can have adverse impacts on noise, air quality and road safety that affect communities living near roads. Freight movement is also changing due to changes in behaviour such as online shopping which has increased home deliveries.

PLANNED STRATEGIC IMPROVEMENTS

3.152 The Roads Investment Strategy (RIS) outlines the Government's vision for the National SRN and Highways England publishes a Strategic Business Plan setting out how it will deliver this vision. RIS2 covers Roads Period 2 (2020-25) and includes plans to invest £27.4bn in the SRN. RIS2 enhancements include the A27 Arundel Bypass and the A27 Worthing and Lancing Improvements.

3.153 RIS2 includes a pipeline of proposals that Highways England will develop during Roads Period 2 so that they could enter construction in Roads Period 3 (2025-30). Preparatory work for these schemes could include

consultation on options or even early stages of the statutory planning process. Funding for construction of these schemes has not been committed. The A27 Chichester scheme has been included in the pipeline for RIS3.

3.154 Designated funds were introduced in RIS1 and are used to fund schemes that go beyond routine operation, maintenance and enhancement, particularly to address environmental impacts. RIS2 has streamlined the system of designated funds, so that there is a single, larger fund for dealing with environmental impacts, including air quality; the Environment and Wellbeing Fund. There is also a fund for Users and Communities, which will improve facilities for walking and cycling around the network. Alongside these, there is an Innovation and Modernisation Fund to support research into latest technologies and a Safety and Congestion Fund for small scale improvements.

3.155 Major schemes are under construction or planned for A259 Littlehampton (between A284 and A280), A284, A2300 and A29 (between Fontwell and Lidsey) that will provide strategic benefits to the operation of the network and sustainable transport network enhancements in addition to mitigating the impacts of development. Additionally, junction improvements and sustainable transport network enhancements are planned at various locations where the cumulative impacts of development are considered to be severe. In most cases, these schemes are only expected to mitigate the impacts of development rather than address pre-existing issues.

3.156 The deliverability of road network improvements can be challenging due to impacts on the environment, political and public acceptability, cost and unaffordability. These issues can be particularly prevalent in protected areas such as South Downs, High Weald and Chichester Harbour which are protected from major development.

MAINTENANCE

3.157 Asset management is widely accepted to effectively deliver efficiencies when managing highway infrastructure assets through longer term planning and ensuring that levels of service are defined and achievable for available budgets. A coherent asset management approach helps to more accurately identify the level of investment required to maintain highway assets to a standard commensurate with council priorities and public demand.

3.158 As part of the Department of Transport Local Highway Maintenance Block Fund for the 5 years between 2016/17 to 2020/21, Local Authorities have been incentivised to demonstrate good practices and an asset management approach. The approved and published Asset Management Policy and Strategy documents have been a mandatory requirement to enable an authority to maximise the value of the Local Highway Maintenance Block Funding received.

3.159 Implementing the Highway Infrastructure Asset Management Policy and Strategy will assist with achieving the objectives detailed in the current West Sussex Plan, and looks forward to contributing to delivering services within the developing framework of resetting the organisation

for a better future by focusing on the following four foundation priorities underpinned by the crosscutting theme of climate change:

- Keeping vulnerable people safe
- A sustainable and prosperous economy
- Helping people and communities fulfil their potential
- Making best use of resources

3.160 In relation to the WSTP, the approach to highway infrastructure maintenance service needs to be linked to the County Council priorities and vision. The Highway Infrastructure Asset Management Strategy supports the WSTP as follows:

- Economy - Promotes economic development by improving the transportation services to enhance economic competitiveness of a region, thus attracting new business or retaining existing business.
- Monitoring - Continuously improve the overall network integrity and resilience to meet established and future WSCC performance targets and maintain a steady state of condition at current levels.
- Communication - Communicate to residents and all interested stakeholders that we will continue to explore innovative and sustainable techniques while delivering a value for money service.
- Sustainability - Preserve environment or minimise the adverse environmental impacts (including ecology, water, air, noise and privacy), preserve natural resources, minimise contribution to climate change and taking care of public health.
- Resilience - Protections in place from highway flooding by delivering effective maintenance, and maintaining a safe, efficient highway by prioritisation of maintenance works on carriageways. However, future adaptions to new road and infrastructure construction are considered, especially with increased traffic flows. As this accelerates deterioration of existing networks and creates a growing need for investment in maintenance.

PARKING

3.161 The management of parking, in particular in built up areas, has become increasingly important for the County Council as the number of vehicles on the roads in West Sussex has increased. The average car is unused 96% of the time and according to one report, parking spaces occupy around 15-30% of a typical urban area.[112] Residential areas, town/city centres and areas close to railway stations, local attractions or hospitals all experience varied levels of parking pressure and this can lead to conflict between competing user groups, for example between residents, shoppers, deliveries, workers and users of different modes of transport.

3.162 Increasing the amount of on-street parking space is rarely possible but by restricting on-street parking where demand exceeds supply, and providing alternative means of access to such areas, the pressure on the

[112] DfT: Future of Mobility: Urban Strategy (2019)

space available can be better controlled. Controlled Parking Zones (CPZs) are a vital component of the County Council's approach to on-street parking management and have been established in Billingshurst, Bognor Regis, Chichester, Crawley, East Grinstead, Horsham and Worthing and operate primarily to assist people living in areas where they experience difficulty in parking close to their homes.

3.163 The County Council has an Integrated Parking Strategy (IPS) that sets out its approach to managing parking. West Sussex is divided into seven Civil Enforcement Areas (CEAs), which are contiguous with the District and Borough boundaries. The District and Borough Councils are the Enforcement Authorities for off-street car parks and parking areas that they operate or control. Through the use of Agency Agreements, they have also been delegated the responsibility for the on- street enforcement service and provision of a Controlled Parking Zone (CPZ) management service.

CAR CLUBS

3.164 There are two car clubs in West Sussex; one in Chichester and one in Horsham both operated commercially by Co-wheels.

TAXI / RIDE-HAILING / RIDE-SHARING

3.165 Taxi or private hire vehicles are widely available across West Sussex.

3.166 Ride-sharing is available through westsussexcarshare.com in some locations, typically linked to employers or development.

3.167 Uber operate a ride-hailing service in some parts of West Sussex, particularly the Crawley/Gatwick area and some coastal towns.

ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

3.168 In January 2022, there were 231 publicly accessible electric vehicle charging points in West Sussex including 53 rapid (25kw or above) chargers[113]. The charging points tend to be located in or near urban areas and there are clusters of facilities in Crawley and Worthing. Electric vehicle charging has the potential to raise revenue in the future and some local transport authorities have awarded concessions to attract private sector investment and share risk.

PUBLIC PERCEPTION

3.169 The NHT survey 2020[114] indicates that public perception of 'overall highways and transport satisfaction' is marginally below average compared to other counties and has slightly declined since 2010.

3.170 The NHT survey 2020 indicates that public satisfaction with road safety (KBIs 20, 21, 22) is marginally below average compared to other counties with slight variation between indicators. Since 2010, two indicators (KBI 20 Road Safety Locally and KBI Road Safety Education)

[113] DfT: Electric Vehicle Charging Device Statistics (January 2022)

[114] WSCC: draft 2020 NHT Survey summary report

have declined, and another (KBI 21 Road Safety Environment) has improved slightly.

3.171 The NHT survey 2020 indicates that public perception of 'condition of highways' in West Sussex is lower (lowest scoring indicator in 2020) than other aspects of highways and transport and has declined since 2018 and is lower than other counties (ranked 24 out of 29 in peer group). Public perception of 'highway maintenance' was slightly below average compared to other counties.

3.172 The 2020 NHT survey took place from June to August at the end of the 1st COVID19 pandemic national lockdown. The survey administrators M2i have reported that nationally the public's satisfaction with Highways and Transport measured through the NHT Survey does not appear to have been significantly impacted by the COVID19 pandemic[115]. However, the majority of authorities had seen their satisfaction results reduce since 2019. M2i have noted that reductions in cycling and congestion scores may be attributable to the increased interest in cycling and the extra maintenance activity carried out by some authorities during lockdown.

Road Network SWOT Analysis

STRENGTHS:

- Planned investment in the A27 at Arundel, Worthing & Lancing and major schemes on A259, A29, A284 and A2300.
- Potential to develop A27 Chichester improvements for future delivery.
- Junction improvements (or financial contributions) are planned in various locations to mitigate planned strategic development.

WEAKNESSES:

- There are pinchpoints where traffic flow exceeds capacity particularly at peak times causing congestion.
- Traffic is forecast to grow faster than construction of new highway capacity exacerbating congestion at capacity pinchpoints.
- Developer-led highway improvements will not resolve pre-existing issues, generally these are in the major towns.
- Public perception of highway maintenance has remained static since 2011.
- Some highway classification issues may result in inconsistent signing.
- Number of KSIs has recently risen and RSF milestones are likely to be missed.
- Lorry Route Network is out of date so may not be used effectively.

[115] m2i: Executive Overview 2020 NHT Public Satisfaction Survey

OPPORTUNITIES:

- Schemes that provide congestion relief and reduce accidents can provide good value for money based on value of time and accident reduction benefits.
- Potential for improved outcomes through investment in complimentary schemes; e.g. sustainable transport infrastructure.
- Highways England Designated Funds are largely unallocated.
- Major Road Network funding is a new funding source for 2020-25.
- Review of the MRN in 2023 could add/remove routes.
- Strategic partnerships (e.g. TfSE, LEP) can influence investment priorities through RIS process.
- Improvements can deliver wider benefits (e.g. facilities for NMUs).
- Electric vehicle charging infrastructure provides potential revenue raising opportunities.

THREATS:

- Negative environmental impacts of road building.
- Environmental constraints, particularly in protected areas (e. g. SDNP) limit the scope for improvements.
- Deliverability of road network improvements is unclear due to political and public acceptability, costs and unaffordability.
- High cost of compulsory land acquisition and defending against legal challenges.

Airport Surface Access

3.173 Gatwick Airport is a nationally significant asset serving the important London market and is a major attraction to businesses and people looking to locate and do business in the UK, stimulating business growth through connections to international markets and attracting inward investment.

AIR PASSENGERS

3.174 Following the global financial crisis in 2008, the volume of passengers at UK airports fell by almost 15%. In 2010/11 Gatwick Airport catered for 31.6m passengers and increased passenger volume year on year until 2019 when 46.6m passengers used the Airport. This has been driven by growth in low-cost long-haul airlines which is significant as these passengers have a greater propensity to use public transport. In 2017, 6.7% of terminating passengers originated or were destined for West Sussex. The largest passenger market was Greater London accounting for 42.2% of terminating passengers.[116]

3.175 In 2019, the mode split for passengers using public transport was 47.4%, comprised of rail 41.3% and bus & coach 6% (based on provisional data supplied by Gatwick Airport Ltd). The public transport mode share has increased by 10% since 2009 largely due to increase in

[116] GAL: Gatwick Airport Master Plan 2019

the rail mode share and a corresponding reduction in private car use. Gatwick Airport Station is used by 21 million passengers per annum[117].

STAFF TRAVEL

3.176 The last comprehensive staff survey was conducted in 2016 and weighted to represent the entire workforce. This survey is used to set and monitor ASAS targets for employees.

HOURS OF OPERATION

3.177 In the Crawley area some local bus services operate 24 hours a day. However, public transport services further away from Crawley can be less frequent or non-existent on some routes in the late night/early morning which limits the available travel options for passengers and employees; a significant number of whom work a shift pattern.

AIRPORT PARKING

3.178 In 2020 there were 40,736 public parking spaces at Gatwick and 19,267 staff allocations. Between 2010-2019 the car mode share declined but peak demand during the summer months has not declined as rapidly.

3.179 In October 2020, GAL announced the intention to apply a £5 charge for use of the forecourts used for drop-offs, starting in 2021. Free pick-up and drop-off facilities will continue to be available in long stay car parks. A proportion of the revenue from applying the charge and fines from red routes are expected to go to the Sustainable Transport Fund for investment in surface access improvements and initiatives. Arrangements for persons of reduced mobility and rail station users are due to be considered.

SURFACE ACCESS STRATEGY

3.180 GAL produces an Airport Surface Access Strategy that includes:

- Targets for increasing the proportion of journeys made to the airport by public transport for both airport workers and passengers;
- The strategy to achieve those targets; and
- A system whereby the Airport Transport Forum can oversee implementation of the strategy.

3.181 The headline targets in the Gatwick Airport Surface Access Strategy 2018 are[118].

- Target 1: Achieve 48% public transport mode share for airport passengers by 2022 under the scrutiny of the Transport Forum Steering Group.
- Target 2: Demonstrate clear progress towards reaching a rail mode share aspiration of 45% by 2030, by achieving a rail mode share of over 40% by 2019 and sustaining at least this level to 2022.

[117] Network Rail: Upgrading Gatwick Airport Station

[118] GAL: Airport Surface Access Strategy (2018)

- Target 3: Achieve 42% of staff journeys to work by sustainable modes (public transport, active travel modes and group travel provided by individual employers for their staff, referred to as "company transport") and 45% including other sustainable travel initiatives (car share and zero emission vehicles) by 2022.
- Target 4: Deliver a reduction in air passenger "Kiss and Fly" car journeys equivalent to at least 10% of its 2017 mode share by 2022, and a reduction in single occupancy car journeys by staff of at least 10% of its 2017 mode share.
- Target 5: Reduce the ratio of staff to parking spaces in line with a shift to more sustainable modes of at least 5% by 2022 and achieve 5% of staff car journeys by registered car share users.
- Target 6: Achieve in excess of a 5% year on year increase in bus use by staff and passengers, and demonstrate measurable value for money from Passenger Transport Levy funding.
- Target 7: Deliver continuous improvement across the full range of Quality Service Monitor metrics, maintaining a level above 4.0 with measurable scores for bus/coach, taxi and car rental.

3.182 The ASAS is regularly monitored by a Surface Access Steering Group and reported through an Annual Monitoring Report.

3.183 Through a legal agreement with WSCC and CBC until December 2021, GAL provide funding for initiatives to deliver the ASAS. In 2020, the Sustainable Transport Fund is ~£1.5m and is used to support local bus services, marketing and capital projects. A new legal agreement is being discussed to replace the agreement that ended in December 2021.

CAPITAL PROJECTS

3.184 Key capital projects that are underway, programmed or planned include Gatwick Airport Station.

TRANSPORT INITIATIVES

3.185 A range of initiatives have been trialled to change travel behaviour, particularly aimed at staff such as Faxi (car-pooling) and Zeelo (demand responsive bus) with mixed success and some notable failures; e.g. early-bird bus services to coastal towns which operated for a 6 month period in 2015.

3.186 The Gatwick Airport Staff Travel Plan coordinates a range of initiatives intended to deliver the ASAS objectives and targets relating to employees. Work to prepare a new STP was undertaken in 2019 but not completed. It is anticipated that a new STP will be prepared in the near future that could potentially influence staff travel patterns as part of the recovery from COVID19.

3.187 In 2020, GAL produced a Bus & Coach Strategy that reviewed existing infrastructure and services. The strategy also assessed some additional routes and demand responsive services, concluding that funding for existing services provides good value for money. If additional funding was available, additional routes to Sussex coastal communities not well

served by rail are likely to increase sustainable transport mode share for employees, but the subsidy per passenger increases significantly with distance. Furthermore, the strategy notes that demand responsive services are unlikely to be commercially viable and would require significant ongoing subsidy.[119]

3.188 An Interim Car Parking Strategy was adopted in 2017 showing capacity for growth to meet demand to 21/22. GAL began to review the Car Parking Strategy in 2020 with the intention to provide a full update to meet demand expectations to 24/25 but this work was paused due to the COVID-19 pandemic.

FUTURE PLANS

3.189 The Gatwick Masterplan 2019 set out three scenarios for future growth and resilience of the Airport:

- Scenario 1: where Gatwick Airport remains a single runway operation using the existing main runway. GAL estimate that passenger numbers could grow to 57-61m by 2032/33 in this scenario.
- Scenario 2: where the existing standby runway is routinely used together with the main runway. GAL estimate that passenger numbers could grow to 68-70m by 2032/33 in this scenario.
- Scenario 3: where land continues to be safeguarded for an additional runway to the south. The eventual capacity of the Airport in this scenario could be around 95mppa.

3.190 The Masterplan also confirms GAL's intention to pursue scenario 2 through the Development Consent Order process and to continue safeguarding land for a future runway to the south. In early 2020, the Northern Runway project was paused alongside other schemes in GAL's Capital Investment Programme due to the COVID-19 pandemic. As of March 2022, technical work on the project is progressing with the expectation that an application for development consent order will be submitted in early 2023.

Airport Surface Access SWOT Analysis

STRENGTHS:

- Well established governance and working arrangements through the Transport Forum Steering Group and legal agreement to December 2021.
- Airport Surface Access Strategy with targets for increasing sustainable transport mode share.
- Data-led understanding of passenger behaviour and perceptions to inform strategy and investment decisions.
- Capital investment in Gatwick Airport Station and recent investment in M23 smart motorway.

[119] GAL: Bus & Coach Strategy Final Draft (2020)

- Infrastructure already in place to support increasing journeys by sustainable modes.

WEAKNESSES:

- No recent evidence of shift by staff to sustainable modes of transport.
- Potential future Airport expansion may increase demand for access to Gatwick and the ASAS does not currently include initiatives to cater for this potential level of growth.
- Evidence of failure of initiatives aimed at changing employee travel behaviour to achieve mode share targets for employees.
- Price competition from car parks and car rental.
- Staff travel plan review in 2019 was not completed.

OPPORTUNITIES:

- Future use of Sustainable Transport Fund.
- Recovery from COVID19 pandemic could be lead to more sustainable travel patterns.
- The introduction of forecourt charging has potential to encourage more sustainable travel behaviour.
- Staff survey indicates a significant number of staff intend to buy/lease electric vehicles.
- Likely reviews of Staff Travel Plan and Car Parking Strategy (both partially complete).
- Gatwick Masterplan scenarios for airport expansion will provide opportunities to improve infrastructure that will benefit the area beyond the Airport itself.

THREATS:

- Medium & long term impacts of COVID19 pandemic on air travel are unknown and could lead to less sustainable travel patterns.
- COVID19 pandemic reduction in air passengers has severely affected businesses viability leading to job losses.
- Susceptibility to future pandemics which could affect willingness to invest in surface access infrastructure.

Urban Air Mobility & Connected and Autonomous Vehicles

SURFACE TO AIR MOBILITY (URBAN AIR MOBILITY)

3.191 The UK Government in its Future Flight Challenge aims to bring together technologies in electrification, aviation systems and autonomy. This could potentially contribute towards the aim of reducing carbon emissions if this removes the need for vehicular trips using fossil fuel propulsion. In addition, the County could benefit from improved connectivity, improved mobility and reduced congestion.

3.192 Drone operations and passenger carrying air mobility vehicles open up opportunities for alternative ways of delivering emergency medical

services, such as defibrillators or healthcare products, especially to the more rural and remote parts of West Sussex. There is the potential for electric air taxi passenger services to enhance connectivity for the residents of West Sussex, particularly those with reduced mobility.

3.193 Drones have the potential to provide operational benefits to some businesses, including potentially Shoreham and Littlehampton Harbours, to undertake tasks such as ship to shore deliveries and port security that may remove the need for some vehicular trips. However, other businesses such as Airports may view them as a threat due to the potential for mid-air collisions.

3.194 At the present time it is unclear what role the Transport Plan needs to plan in facilitating urban air mobility. Therefore, its potential should be recognised and monitored as the plan is implemented.

CONNECTED AND AUTONOMOUS VEHICLES (CAVS)

3.195 Connected and Automated Vehicles (CAVs) do not require the driver to be paying attention to the road, the individual's own vehicle or other travellers on the road when in automated mode, except to safely resume control in response to a transition demand. Therefore, the Government is proposing the addition of a new section to The Highway Code, articulating expectations for CAV users. This change will bring the code up-to-date, reflecting the changing technology available on our roads. This approach will ensure drivers understand what is permissible in a CAV, including the need to resume control when requested by the vehicle.

3.196 CAVs have taken longer to develop than first anticipated. The artificial intelligence required to make the vehicle drive safely is vast and this is expensive to collect. Human drivers do many complicated functions, such as eye contact to establish right of way, and this data all needs to be accumulated for CAVs to function safely. In addition, infrastructure will be needed for these vehicles to function. To avoid a patchwork of different technologies emerging, there is a need for a consistent nationwide approach to be coordinated at a national level.

3.197 According to Central Government's Connected Places Catapult Market Forecast For Connected and Autonomous Vehicles the central scenario indicates that in the UK, total annual sales by 2035, will equate to 1.36 million CAVs (including cars, vans, HGVs and buses). The CAV uptake is different across vehicle types, with cars leading in terms of CAV technology integration. CAVs represent 40% of total annual cars sales in 2035 in the UK and over 94% of all CAVs sold in the UK in that year.

3.198 There is potential for CAVs to bring benefits to the transport network in West Sussex through for example; reduced emissions, reduced congestion improved road safety and social inclusion. However, this will depend on technologies being developed that can deliver beneficial outcomes and potential negative impacts such as landscape/townscape impacts through additional street furniture. At the present time it remains unclear what role the Transport Plan should play in facilitating the introduction of CAVs. Therefore, their potential should be recognised and monitored as the plan is implemented.

Urban Air Mobility & Connected and Autonomous Vehicles SWOT Analysis

STRENGTHS

- TfSE have developed a future mobility strategy which considers future transport technologies.
- Parts of West Sussex are being upgraded with faster broadband which may facilitate use of CAVs and other future transport technologies.
- Strategic partnerships (e.g. TfSE) are established that could provide regional coordination and cross-boundary continuity.

WEAKNESSES

- Some sections of the community might feel less comfortable using drones and / or automated vehicles which could cause inequality.
- Potential or perceived safety and privacy issues still need to be overcome.
- The safety and environmental benefits of CAVs are subject to ongoing monitoring to see if they are better than traditional vehicles.

OPPORTUNITIES

- Opportunity to benefit residents, particularly those with reduced mobility and those in isolated or rural areas by creating new travel options.
- Potential for congestion relief if vehicular trips are replaced by Surface to Air Mobility or more efficient travel behaviour.
- Potential for road safety improvements.
- Improvements could deliver wider benefits that assist people who have been excluded before (e.g. those who cannot drive a conventional car).

THREATS

- Potential to change travel behaviour which could undermine the case for transport network improvements which to some extent depends on road based travel continuing in the future.
- Potentially increased costs to the County Council for maintenance of new infrastructure.
- Potential inconsistency between private suppliers of Surface to Air Mobility and CAVs. Providers may seek out only the most profitable areas rather than those where social needs are greatest.

Rail Network

3.199 The rail network in West Sussex is comprised of the Brighton Main Line, Arun Valley Line, Horsham – Dorking (Mole Valley) Line and the West Coastway Line and its branches to Littlehampton and Bognor Regis. The rail network in West Sussex is vital for access to London due to its competitive advantage over other modes of travel. While journey times between parts of West Sussex - for example the centre of Chichester, Horsham and Crawley - are very competitive compared to road journeys,

connectivity and journey times on other east-west routes, for example West Coastway services, are often less competitive than travelling by road.

RAILWAY STATIONS

3.200 There are 38 railway stations in West Sussex and as shown in Table 21 in Appendix A, in 2019/20 there were 55.7million entries and exits at these stations. In 2019/20, the busiest station by some margin was Gatwick Airport with 21.1m entries and exits and the quietest was Faygate with 8,614 entries and exits. With the exception of Gatwick Airport, the busiest stations are all in large towns. However, some villages, notably Hassocks and Barnham had close to 1m entries and exits in 2019/20 and play an important role in serving their surrounding rural communities. Usage of West Sussex railway stations grew every year between 2010/11 and 2018/19[120]. In 2019/20 and 2020/21, the number of entries and exits at West Sussex railway stations reduced to 55.7m and 11.2m respectively due largely to the impacts of the COVID-19 pandemic.

LEVEL CROSSINGS

3.201 There are 113 level crossings in West Sussex, comprised of 59 road crossings (public and private) and 54 Public Right of Way crossings. Level crossings have an impact on the operation of the road network and affect connectivity between places, either in isolation or in combination with other connectivity issues (e.g. rail service patterns). Recent experience developing major highway improvements (e.g. A284 Lyminster Bypass and A29 Realignment) suggests that schemes which alleviate level crossing delays can provide very high value for money due to travel time savings.

3.202 Level crossings are a safety risk to the operation of the railway and there are aspirations to remove them. However, removing them requires coordination with local highway authorities to ensure that connections are maintained, potentially through provision of alternative facilities, in particular for cycling and walking connectivity. There is currently no coordinated programme to remove level crossings.

ROLLING STOCK

3.203 The majority of rail services in West Sussex are operated using modern rolling stock. However, some West Coastway services are operated using 3-car Class 313 units which have been in service for over 40 years and have limited on board facilities (i.e. no toilets or air conditioning).

PERFORMANCE

3.204 In 2019/20, the annual average Public Performance Measure indicated that for Govia Thameslink Railway Southern Mainline & Coast and Gatwick Express, 87% and 74% of services respectively were punctual (i.e. arrival within 5 minutes of scheduled arrival time) at their final destination. As shown in Table 20 in Appendix A, performance on

[120] ORR: Estimates of Station Usage

Southern Mainline & Coast, which includes most services in West Sussex, has largely recovered following a period of disruption due to industrial relations disputes in 2016/17 but performance on Gatwick Express has not recovered as strongly.[121]

LONG TERM PLANS

3.205 In parallel with the High Level Output Statement (HLOS), Network Rail has the following investment programmes:

- Rail Network Enhancement Pipeline – this sets out plans for infrastructure investment (e.g. capacity enhancements)
- Strategic Business Plan – this sets out Network Rail's priorities for maintenance and renewal on a route basis

3.206 In parallel to HLOS and its investment programmes, Network Rail also considers a longer-term time horizon through its Long-Term Planning Process (LTPP) which considers the long-term capability of the rail network up to 30 years ahead. As part of the LTPP, Network Rail has begun to undertake analysis of particular issues on part of the rail network through Continuous Modular Strategic Planning. The first CMSP study in the South East has focused on the West Coastway and Arun Valley Lines in West Sussex[122] and the outcomes are being considered as part of the TfSE area studies.

CONTINUOUS MODULAR STRATEGIC PLANNING

3.207 The West Sussex Connectivity Modular Strategic Study (2020) considers potential future rail service, infrastructure and other transport improvements in relation to the West Coastway (Brighton-Havant), Arun Valley Line (Three Bridges to Arundel Junction), Bognor Regis and Littlehampton branches. The study tests options and considers their business case at a high level. It responds to a set of "strategic questions" identified with input from stakeholders capturing potential rail service and infrastructure improvements that can be considered for inclusion in the Rail Network Enhancements Pipeline (RNEP). One of the challenges highlighted in the study are the environmental constraints which limit the scope for improvements (e.g. built-up areas, hills, coastline etc).

3.208 The CMSP study recommends the following immediate interventions:

- Replace the Class 313 units with modern Coastway-configured trains;
- Introduce Option 1 [Maximising use of today's infrastructure], which includes provision of 15-min interval Brighton-Worthing-Littlehampton services, and improved spacing Chichester-Portsmouth/Southampton services and requires no additional rolling stock or infrastructure;
- Advertise the late evening trains from Brighton to Worthing, in liaison with the British Transport Police;

[121] ORR: Disaggregated train punctuality and reliability performance on the rail network – periodic by sub-operator – table 3.9

[122] Network Rail: West Sussex Connectivity Modular Strategic Study (Spring 2020)

- Improve coastal connectivity by providing faster journey times through changes to the Class 377 rolling stock to enable a quicker process to split/attach trains, for example at Horsham for journeys to Bognor Regis.

3.209 The CMSP study recommends initiating the following projects for funding through RNEP:

- Enable reduced level crossing down times by lengthening platforms that are too short for the longest trains;
- Enable faster east-west journeys and improve service resilience by progressing Worthing bi-directional working and a new platform at Brighton which could reduce journey times for Brighton services operating west of Worthing by 5-6 minutes and allow 6 trains per hour to operate Worthing to Brighton, subject; and
- Enable later/earlier trains between Horsham and Gatwick Airport by implementing bi-directional infrastructure.

3.210 Other options highlighted requiring further development with TfSE and other stakeholders include:

- Further development of infrastructure led options to improve east-west journey times, optimising the mix of long-distance and stopping services;
- Increasing services from Brighton to/from Bristol and beyond; and
- Improved walking, cycling and bus links to stations, in particular to connect key employment sites with integrated bus timetables, and South Downs National Park connections.

3.211 Other recommended proposals include:

- Further work with stakeholders on proposals for Arun Valley Line new stations;
- Non-London services train lengthening;
- Platform lengthening to ensure platforms can accommodate the longest train;
- Power supply assessment for longer trains; and
- Digital railway technology and enhanced renewals to deliver a 2-minute headway and 90mph where possible.

3.212 The study was largely completed before the COVID19 pandemic so did not take account of the impacts on passenger demand. Also, as the recommended proposals have not yet been subject to consultation, it is unclear whether all of them are likely to be supported by local stakeholders.

NETWORK RAIL: SOUTH EAST ROUTE SUSSEX AREA ROUTE STUDY 2015

3.213 This Sussex Route Study sought to establish the required future capacity and capability of the railway, from a systematic analysis of the future requirements of the network. The Sussex Route Study sets out a strategy for the rail network in the area covering the Brighton Main Line

(BML) and connecting routes including choices for funders to inform investment decisions.

3.214 The Route Study analysis concludes that there is a capacity gap on BML requiring 4-6 additional trains per hour by 2023/24 and 6-8 additional trains per hour by 2043 over and above the 2018 baseline. Network Rail is developing improvements at Windmill Bridge Junction and East Croydon to meet this challenge. However, the improvements are not fully funded.

3.215 Network Rail consider that it will not be possible to continue incrementally adding services to the route to ensure that performance remains acceptable in the long term.

ROUTE UTILISATION STRATEGIES

3.216 Network Rail previously used a series of Route Utilisation Strategies (RUSs) to consider the most efficient ways to use and where appropriate to increase network capacity. Two RUSs have considered the West Sussex area; the London and South East RUS 2011 and the Sussex RUS which provided the basis for investment decisions.

CAPITAL INVESTMENT

3.217 In 2019, Network Rail carried out £67m work maintenance work on Brighton Main Line and £5m between Barnham and Havant to improve reliability and performance. Further works are planned around Horsham station in summer 2021 to improve reliability and performance.

3.218 In Control Period 6 (April 2019 – March 2024), Network Rail plan[123] to:

- Target signal reliability at key junctions through a renewals programme;
- Upgrade Gatwick Airport Station (see Airport Surface Access for details); and
- Install a new footbridge and lifts at Crawley Station (now completed) through the Access for All programme.

3.219 Additional Access for All programme improvements have more recently been announced for East Grinstead and Wivelsfield station to enable step free access to both platforms at these stations.

WILLIAMS RAIL REVIEW

3.220 The Williams Rail Review was established in September 2018 to look at the structure of the whole rail industry and the way passenger rail services are delivered. The Williams-Shapps Plan for Rail was published in Spring 2021.

3.221 The plan proposes to establish a new public body, Great British Railways (GBR), to bring the network under single national leadership - owning infrastructure, receiving fare revenue, running and planning the network and setting most fares and timetables. Network Rail, the current infrastructure owner, will be absorbed into this new organisation, as will

[123] Network Rail: Control Period 6 Delivery Plan Update: Southern Region (2020)

many functions from the Rail Delivery Group and Department for Transport. GBR is expected to simplify ticketing and offer greater ticketing flexibility and co-ordinated with other forms of transport, such as buses and bikes.

3.222 The establishment of GBR and associated activities is likely to be an area of focus for the County Council and its strategic partners, particularly TfSE in the early part of the plan period. This is likely due to the need ensure GBR integrates well with other aspects of the transport network that are planned at a local level and present opportunities for the County Council and other local stakeholders to address existing issues with how the rail network operates.

Rail Network SWOT Analysis

STRENGTHS

- Rail infrastructure upgrades for BML and West Coastway Lines have been identified.
- Gatwick Airport Station upgrade is under construction.
- Year on year growth in railway use (pre COVID-19 pandemic).
- Recent investment to improve reliability of BML and West Coastway.
- Performance has largely recovered following industrial relations disputes.

WEAKNESSES

- Rail infrastructure upgrades are not fully funded.
- Patronage is forecast (pre COVID19) to exceed capacity in some areas.
- Passenger numbers were forecast to grow faster than additional capacity can be added meaning infrastructure upgrades would be required to reduce over-crowding.
- East-west rail connectivity and journey times between economic hubs is poorer compared to radial rail routes to London.

OPPORTUNITIES

- Options for West Coastway Line enhancements will be considered as part of the TfSE Outer Orbital Area Study.
- Potential for improved outcomes through investment in complimentary schemes; e.g. sustainable transport infrastructure.
- High value for money of road schemes that alleviate level crossing delays.
- In some areas service lengthening can address capacity issues relatively quickly.
- A coordinated programme of investment in local highway connections could allow some level crossings to be removed.
- Opportunities for rail services to be orientated to better support local connectivity, including access to service hubs and leisure access, as a result of post-COVID19 travel behaviour changes.

- Establishment of GBR and new operational model has potential to address historic issues.

THREATS

- COVID19 pandemic has reduced passenger demand requiring Government intervention to maintain services.
- The recovery trajectory from COVID19 is uncertain and may be lower than previously forecast due to greater competition from working from home.
- Long term impacts on passenger demand and commercial viability are unknown.
- Stakeholder views on options for West Coastway Line are unknown.
- Environmental constraints (e.g. built-up areas, hills, coastline etc) limit the scope for improvements.

Rail Freight and Short-Sea Shipping

RAIL FREIGHT

3.223 Other than through statutory planning system, the County Council has limited influence on how goods are moved. Planning policies, including for waste and minerals generally encourage transportation of goods via rail freight. However, in practise the small quantity of goods and lack of rail connectivity often means that transportation by rail freight is not a viable option in West Sussex.

3.224 Rail freight works most efficiently transporting high-volume, regular freight from a main location to another main location. It does not work so well for smaller freight quantities between many dispersed locations, as is the case in West Sussex. In terms of investment in rail freight infrastructure, the cost is high, and the availability of land would also be a key constraint in West Sussex. The rail network in West Sussex is congested in terms of the high volume and frequency of passenger services. This makes it much more complicated to find freight paths. The resulting outcome is that most freight in West Sussex is transported by road.

3.225 Nationally, construction traffic and rail freight volume is forecast to continue to grow strongly. Based on varying forecasts that project unconstrained growth, constrained growth (due to restricted capacity and capability) and a scenario-based option to reflect future uncertainty, the main conclusion is that there will be continued strong growth in the rail movement of containers and construction traffic. As West Sussex does not have infrastructure for transferring containers to rail and opportunities for rail freight in construction are limited, the rail freight opportunities in West Sussex are likely to continue to be limited in the plan period.

SHORT-SEA SHIPPING

Shoreham Port

3.226 Shoreham is a small port which operates primarily in short sea shipping. The Port mainly handles and loads/offloads ships (stevedoring) and it offers a tracking stock control system. Most of the cargo passing through Shoreham Port is associated with construction (timber/aggregates/steel) and agriculture (grain and fish). In the future, Shoreham Port would like to diversify its cargo base to support the renewable energy sector.

3.227 Two million tonnes of goods typically move through the port annually with an average of 300 trucks per day. This can cause challenges on the A259 and the A27 in West Sussex for freight accessing Shoreham Port, although the main lorry route is via A293 and A270 in Brighton & Hove.

3.228 The Port is an essential part of the UK's supply chain closely associated with the construction industry with its handling of aggregates, timber and steel. The first national lockdown in March 2020 resulted in a substantial slowdown of ships and cargo coming over the quays. Later in the year, as the construction industry opened back up, the Port swiftly saw a pickup in timber volumes with the demand increasing. Shipping movements, entering and departing the Port in 2020 were 11.6% down on 2019.

3.229 One of the key issues for Shoreham Port is its competitiveness with other ports along the South Coast. There is a risk that without expensive investments in improvements at Shoreham Port, the Port could become less competitive in relation to its competitors.

3.230 Smaller ports, such as Shoreham, can act as overflow locations, providing resilience for larger ports in the UK. In addition, Shoreham Port could provide specialist services that complement the capabilities of other ports in the region. Ensuring ports have adequate network road and rail links so as not to hinder their performance is critical to ensuring they can perform these strategic functions for the economy.

Littlehampton Harbour

3.231 Situated between Shoreham Harbour and Portsmouth Harbour, Littlehampton has limited facilities for commercial shipping. As a tidal port, Littlehampton cannot accept ships every day of the year due to there being insufficient clearance when there is a neap tide. That said, sea-dredged aggregates, road stone and alike are able to be accepted on occasions. The harbour is mainly used for charter and commercial fishing, small coasters and visiting yachts.

Rail Freight and Short-sea Shipping SWOT Analysis

STRENGTHS

- Freight links to Brighton & Hove are well established
- Shoreham Port in particular provides access to Continental Europe for bulk transportation of goods

- Shoreham Port is a relatively short distance from the County SRN (i.e. A27)

WEAKNESSES

- There is limited land and environmental constraints which prevent rail freight expansion
- Road congestion on the County SRN causes delays in the transportation of goods for at least some of their journey

OPPORTUNITIES

- Shoreham Port Authority are exploring renewable energy markets (e.g. hydrogen) which may provide opportunities to collaborate on transport projects

THREATS

- Shoreham Port may become less competitive without expensive investments in port improvements

Bus Passenger Transport

NETWORK STATISTICS

3.232 The annual number of bus passengers in West Sussex increased from 25.3m in 2010/11 to 27.6m in 2015/16 before declining to 24.8m in 2019/20 as shown in Table 22 in Appendix A. Although passenger numbers increased around the County between 2010-16, the increase was strongest in the Crawley area where investment has been made by the County Council and bus operator, Metrobus, to improve journey times, frequency, reliability and quality of services as part of the Crawley Fastway network.

3.233 Bus mileage in West Sussex is approximately 13.5 million miles per annum. 85% of the bus mileage is provided on a fully commercial basis by bus operators. The remaining 15% of bus mileage is financially supported.

3.234 As a general pattern, bus frequencies are greatest on routes within and between the major towns. Some of these services operate 24 hours. Two key inter-urban corridors exist; one along the coast from Brighton to Portsmouth through the West Sussex towns of Shoreham-by-Sea, Worthing, Littlehampton, Bognor Regis, and Chichester. The second key corridor is from Southwater to Gatwick Airport, through Horsham and Crawley (some routes extend from Gatwick to Reigate in Surrey).

FARES AND TICKETING

3.235 Bus operators in West Sussex offer a wide range of discounted fares. Contactless payment is now common with operators and in the case of Metrobus and Brighton & Hove Buses, some 'tap-on / tap-off' ticketing has been implemented. Integrated ticketing is gradually being introduced in West Sussex but in a piecemeal fashion. Metrobus and Brighton & Hove Buses are joined with Southern Railway's KeyGo smartcard initiative, using it to tap-in & -out for rail fares with bus trips

added at both ends of the journey, the best fare being automatically calculated. It is available for add-on local urban bus journeys in Shoreham, Burgess Hill, Crawley, Gatwick Airport, Ifield, Three Bridges, Haywards Heath, Horsham and Littlehaven. This is in addition to PlusBus, which allows local bus trip add-ons at the end of a rail journey for major towns throughout England, including Bognor Regis, Chichester, Crawley/Gatwick, East Grinstead, Haywards Heath, Horsham, and Worthing. Zonal ticketing is available in the main towns of West Sussex.

FUNDING

3.236 The County Council spends £1.8m per annum supporting conventional bus services that are not commercially viable. Contributions from large employers such as Gatwick Airport Ltd and developers result in annual support for bus services of approximately £3.4m. However, developer contributions are typically time-limited and intended to pump prime services while developments are built out. If services are not commercially viable when funding ends, this can result in services being lost or reduced.

PUNCTUALITY

3.237 Preliminary information on bus punctuality indicates that punctuality problems are most prevalent on school routes, Compass Bus services are most severely affected, and with only a few exceptions punctuality has significantly improved in 2020 (even in July and August when traffic returned close to pre-COVID pandemic levels).

CHALLENGES

3.238 The West Sussex Bus Strategy identifies the following challenges:

- Bus service punctuality is impacted by congestion which continues to grow in most urban areas;
- Usage of public transport cross tickets is low and the application of technology for easy payment and bus pass solutions is not universal;
- Pollution from buses, particularly the large number of older vehicles used for secondary services and school transport;
- Journey experience in many areas compared to other modes of transport;
- Ensuring new developments are designed to incorporate buses as a priority, along with walking and cycling;
- Availability of bus revenue support funding and high cost of rural services;
- Public sector funding varies across West Sussex; and
- The cost of public transport can be a barrier to accessing employment, education and local services.

FUTURE MOBILITY

3.239 The introduction of new mobility services is expected to change access transport services in the future. There is potential for abstraction from

bus passenger transport as passengers choose new mobility services instead of using the bus. There is uncertainty about the scale of impact on bus patronage.

PUBLIC PERCEPTION

3.240 The NHT survey 2020[124] indicates that public perception of 'local bus services' is good compared to other indicators (fourth highest ranked indicator) and is high compared to other counties (ranked 3 out of 29 in peer group) and has remained consistent since 2010.

ACCESSIBLE PUBLIC TRANSPORT

3.241 All vehicles with more than 22 seats used on registered buses or other services where passengers are paying separate fares have to be fully accessible for disabled people with the exception of routes where fares are not charged, i.e. school/works contracts and free bus services.

Bus Passenger Transport SWOT Analysis

STRENGTHS:

- Overall increase in bus patronage since 2010/11.
- Notable increases in patronage in some areas following investment (e.g. Crawley).
- Public perception of local bus services is high.
- Majority of population is within a 60minute public transport journey of a main service centre.
- Buses are generally accessible.

WEAKNESSES:

- Infrastructure investment is failing to keep pace with growth in congestion which affects bus operational efficiency and punctuality.
- Developer contributions are time limited.
- Use of cross tickets is low.
- Variability of funding across West Sussex.
- Cost of public transport is a barrier to accessibility.
- Pollution from older buses used for secondary and school transport.

OPPORTUNITIES:

- Establishment of Enhanced Partnerships.
- National Bus Strategy is imminent which may open up funding opportunities.
- New developments can give greater priority to buses to improve attractiveness.
- Future mobility services may change the way we access and pay for transport services.

[124] WSCC: draft 2020 NHT Survey summary report

THREATS:

- COVID19 pandemic has reduced passenger demand and capacity requiring Government intervention to maintain services.
- The recovery trajectory from COVID19 is uncertain and demand may be lower than before the pandemic due to greater competition from working from home which may affect viability.
- Congestion reduces operational efficiency which may impact service viability.
- Future mobility services may abstract bus passengers affecting service viability.

Non-Motorised Users

CYCLE & PEDESTRIAN NETWORK

3.242 There are 75km of cycleway and 7497km of footway in West Sussex. 68% of the Public Rights of Way network can only be used by walkers, not cyclists[125].

3.243 National Cycle Network (NCN) routes 2, 20, 21, 82, 88, 223, 228 are in West Sussex but there are gaps in these routes where cyclists are required to use roads or follow other routes that do not form part of the NCN.

3.244 The Walking and Cycling Strategy includes a priority ambition to create a network of high quality segregated inter-community routes that are typically aimed at cycling. The key challenges for achieving this ambition are that facilities of this nature are expensive to provide and are more deliverable where road width and associated highway land is sufficient to accommodate the design.

3.245 Severance can be caused by railways and strategic roads; for example, at level crossings cyclists either have to wait with vehicular traffic or navigate steps and footbridges which require cyclists to dismount and can be challenging for cyclists. Where there are pedestrian tunnels, underpasses and bridges providing access across busy roads and railways, they can carry a cycle prohibition forcing cyclists to dismount. On strategic roads, there is sometimes not enough space in the central reservation to wait with the length of a bike.

3.246 Competition for space between different users can lead to conflict, particularly on popular routes or where there is insufficient space or facilities to segregate different users. This problem can occur on shared spaces where conflicts can occur between pedestrians and cyclists but also on roads where conflicts can occur between vehicles and cyclists.

USAGE

3.247 In England, the National Travel Survey indicates that cycle levels have increased between 2010 and 2019[126] based on the number of trips, stages, distance and time per rider per year. However, there are year

[125] Page 5, West Sussex Rights of Way Management Plan 2018-2028

[126] DfT: NTS table NTS0314 Bicycle and motorcycle trips per rider per year: England

on year variations and many of these indicators have been in decline since 2014 and 2015 (but remain above 2010 levels). A summary of this data is shown in tables 23, 24 and 25 in Appendix A.

3.248 The County Council records cycling levels at cycle counter site cordons, mainly located in towns (e.g. Brighton Road Worthing, A24 Findon Valley, Green Lane and Southgate Ave in Crawley and Centurion Way Chichester) with some dedicated cycle infrastructure. There are a small number of counters and the quality of monitoring data is quite variable, so this data needs to be considered alongside other sources of information to draw reliable conclusions. The cycle counter data shows that annual cycling levels have increased since 2010 reflecting the national trend outlined in the NTS. In some locations, cycling appears to be on an increasing trend but others have been fairly static towards the end of the 2010-19 period.

BIKE HIRE

3.249 There is one on-street bike hire scheme in West Sussex; Donkey Bike in Worthing which is a largely commercial operation of 35 bikes across 9 hire locations in Worthing. Bikes are parked at Sheffield stands and the service is accessed through a smartphone app. The scheme has received a small subsidy from the Worthing Borough Council to run until September 2021 and its long-term future is unknown.

3.250 The Brighton & Hove bikeshare scheme operates close to the county boundary in Brighton & Hove. The scheme launched in September 2017 and has 500-600 bikes located at approximately 70 docking stations and by August 2020 had facilitated 1 million trips. The scheme is operated by Hourbike who have a concession contract which is due for renewal in August 2021 and there is potential for the scheme to be extended into West Sussex.

SAFETY

3.251 West Sussex safety results are generally in line with the national trend which has seen a significant increase in the number of cyclists killed or seriously injured in recent years.[127] As outlined in Table 18 in Appendix A, pedal cycle KSI casualties have increased by 100% against the 2005-2009 baseline. This is partly explained by an increase in pedal cyclist traffic in Great Britain of 17% from 2008 to 2018.

PUBLIC PERCEPTION

3.252 The NHT survey 2020[128] indicates that public satisfaction with walking and cycling infrastructure (KBIs 11, 12, 13 and 14) is close to average compared to other counties with slight variation between indicators. There has been slight decline in scores from 2019 to 2020 which may reflect increased walking and cycling following the first COVID19 lockdown, but overall, since 2010 the indicator trends have remained fairly consistent.

[127] WSCC: West Sussex Walking and Cycling Strategy 2016-2026 (updated 2020)

[128] WSCC: draft 2020 NHT Survey summary report

PUBLIC RIGHTS OF WAY NETWORK

3.253 There are over 4,000 kilometres (2,500 miles) of Public Rights of Way Network (PRoW) in West Sussex, which includes footpaths (1717 miles), bridleways (733 miles), restricted byways (81 miles) and Byways Open to All Traffic (BOATs) (8 miles). There are also long-distance trails which partially follow PRoW such as the South Downs Way and Downs Link. In the near future, the planned England Coast Path will be a new long-distance trail through the County.

3.254 There is a mixture of urban and rural PRoW. The paths on the coastal plain are mainly footpaths so there are very limited opportunities for users other than walkers. Although there is demand for more off-road cycling and horse-riding opportunities using the PRoW network given the flat terrain, the highly populated area and the busy nature of the road network, bridleway off-road cycling or horse-riding opportunities are very limited. The existing bridleways do not link together well which limits opportunities to use to bridleway network to those users who are also able to use the road network. North of Chichester is rural, and the PRoW network offers opportunities to link communities and offer sustainable transport options. The difficulty with this is the lack of bridleway connections particularly and those that do exist are often severed by the road network with little provision for safe crossings. In the north east of West Sussex, the limited bridleway network also often lacks connectivity or is severed by the road network.[129]

3.255 Severance by major roads, railways and watercourses is a significant challenge for the PRoW network as crossing facilities are often not sufficient or do not exist at all. This can mean long detours for PRoW users or creates areas that are not well connected which is likely to deter usage in these areas.

3.256 No formal usage monitoring of the PRoW network takes place. During 2020 there has been an increase in problem reporting which may be associated with an increase in usage.

CHALLENGES

3.257 The Rights of Way Management Plan identifies four key challenges that the County Council and partners need to focus on:

- Providing an effective maintenance programme for the PRoW network;
- Improving connectivity and minimising severance on the PRoW network;
- Improving accessibility; and
- Ensuring people are aware of the PRoW network and have the knowledge and confidence relevant to their responsibilities.

3.258 The Rights of Way Management Plan identifies that the road network, particularly minor roads, plays a significant part in connecting off-road routes in rural areas. It also identifies that in many places, roads are

[129] WSCC: West Sussex Rights of Way Management Plan 2018-28 (2018)

becoming increasingly busy and considered by many users as too dangerous to use or cross.

EQUESTRIANISM

3.259 As a largely rural County, West Sussex is home to a number of equestrian centres and stables, although the exact locations and total number are uncertain. Equestrianism is understood to form an important part of the local rural economy. Opportunities for riding are limited by safety and severance issues caused by the road and rail network where there is an absence of suitable crossing points to link up the bridleway network, as well as a lack of suitable parking opportunities for horse trailer boxes to access the network.

PUBLIC PERCEPTION

3.260 The NHT survey 2020[130] indicates that overall public perception of 'rights of way' (KBI 15) is slightly above average compared to other counties (ranked 9 out of 29 in peer group) and has remained fairly consistent since 2010.

Non-Motorised User SWOT Analysis

STRENGTHS:

- Extensive footway and PRoW network.
- Public perception of NMU networks is average or close to average.
- COVID19 pandemic has generated additional interest in walking & cycling.
- LCWIPs (or similar studies) have identified (or in development) and in some cases prioritised local cycle networks.
- Walking & cycle network improvements (or financial contributions) are planned in various locations to mitigate planned strategic development.

WEAKNESSES:

- Cycle network is short compared to the road and PRoW network.
- Significant increase in the number of cyclists killed or seriously injured.
- Severance caused by roads and railways.
- Walking & cycling network improvements have to compete for roadspace with motorised transport creating tension between users.
- Levels of cycling are low and not on an increasing trajectory compared to motorised transport which can be a barrier to investment.
- Quality of monitoring data is quite variable.

[130] WSCC: draft 2020 NHT Survey summary report

OPPORTUNITIES:

- Likely to be new funding streams to support active travel in 2020-25 as Government has committed £2bn to active travel over the parliament.
- Improvements can play an important role in delivering environmental benefits (e.g. green infrastructure).
- Bike sharing schemes may have revenue generation potential.

THREATS:

- Funding for NMU networks is not ringfenced so competes with other schemes.
- Criteria-based challenge funds require up-front revenue investment.
- Deliverability of NMU facilities is unclear due to political and public acceptability, cost and unaffordability.
- High cost of compulsory land acquisition and defending against legal challenges.

4. Challenges

4.1 The analysis informed the development of a set of environmental, economy, social and transport network challenges that need to be addressed by the WSTP:

Environmental

4.2 Travel patterns in West Sussex are dominated by use of vehicles that use fossil fuel propulsion which contributes to climate change and the pace of decarbonisation is not currently fast enough to meet the Government's climate change ambition to achieve net zero carbon by 2050.

4.3 Usage of the transport network has negative impacts (e.g. air and noise pollution) on the local natural environment, including protected areas.

4.4 Improving the transport network may require land that is protected or have negative impacts on protected areas, which may preclude or limit the available options.

4.5 Large areas of the County are protected for their landscape, ecological, or historic characteristics, some of which are of international importance.

4.6 The transport network in West Sussex is vulnerable to the weather, particularly increased extreme events due to climate change.

Economy

4.7 The performance of the West Sussex economy in terms of output and productivity varies spatially. The coastal West Sussex area typically underperforms compared to the Gatwick Diamond which benefits from the strongest transport links to London and the rest of the UK and proximity to Gatwick Airport.

4.8 Planned development is expected to take place, particularly in the coastal West Sussex and Gatwick Diamond areas and there are

regeneration initiatives in some coastal towns which could increase commuting if suitable jobs are not created at a similar rate to housing delivery.

4.9 The COVID-19 pandemic has had a significant adverse impact on the West Sussex economy, particularly on leisure and tourism and in areas such as Crawley that are dependent on industries that have been particularly badly affected.

Social

4.10 Growing and ageing population expected to grow most in existing settlements, as well as across the coastal West Sussex area which already has a higher proportion of older people, increasing demands on transport infrastructure and services.

4.11 Risk of isolation in rural areas as public transport has viability challenges and there is a need to travel to access some services which has a disproportionate effect on those groups that depend on these services and public transport.

4.12 Transport infrastructure can cause severance and accessibility issues, which prevent access to green and blue spaces, and result in unhealthy lifestyles due to limited opportunities for active travel.

4.13 Use of the transport network creates air quality, noise and light pollution that can have adverse public health and well-being impacts.

Transport Network

4.14 Travel behaviour in West Sussex is dominated by car travel and electric vehicles make up a very small proportion of the total number of vehicles.

4.15 The COVID19 pandemic has had a dramatic impact on travel behaviour and the long-term impacts on travel demand are uncertain.

4.16 There are capacity pinchpoints on the County SRN, particularly east-west routes including A27, where demand exceeds capacity leading to congestion, pollution, rat-running and road safety issues.

4.17 Major schemes and improvements are planned to mitigate development but will require additional funding to address pre-existing issues and improvements may have consequential impacts that need to be managed.

4.18 Gatwick Airport is a major international gateway that attracts passengers and employees from a wide area and surface access can have adverse impacts on communities that share routes to the Airport.

4.19 There are potential opportunities and consequential impacts on nearby communities from planned or potential major projects such as Gatwick Airport Station and Gatwick Airport expansion.

4.20 The COVID19 pandemic has had a dramatic impact on travel behaviour and it is unclear what the long-term impacts will be on travel demand for access to Gatwick Airport.

4.21 Rail services on West Coastway and Arun Valley lines are slow and rolling stock quality can be poor. Capacity on services to London is not

sufficient to cater for forecast demand. Rail network, service and rolling stock enhancements are identified to address these issues but, in most cases, these are not fully funded.

4.22 There are potential opportunities and consequential impacts on nearby communities from planned or potential major projects such as the Brighton Main Line upgrades.

4.23 The COVID19 pandemic has had a dramatic impact on travel behaviour. It is unclear what the long-term impacts will be on rail demand.

4.24 Bus network punctuality and efficiency is unsatisfactory due to congestion on many routes into and within urban areas.

4.25 The availability of transport services depends on where you live with rural areas having fewer options and financial viability challenges.

4.26 The cost of public transport can be a barrier to accessibility.

4.27 The footway network is extensive (7497km) but there are only 75km of cycleway in West Sussex and severance can be particularly problematic for some users; e.g. equestrians.

4.28 Public acceptance of roadspace reallocation particularly when levels of cycling and walking are low compared to motorised transport.

4.29 The cost of improvements is likely to outweigh the available funding.

Appendix A

Figure 1: Decarbonising Transport Domestic Transport Greenhouse Gas Emissions Projections, versus baseline (DfT: Decarboning Transport: A Better. Greener Britain, 2021)

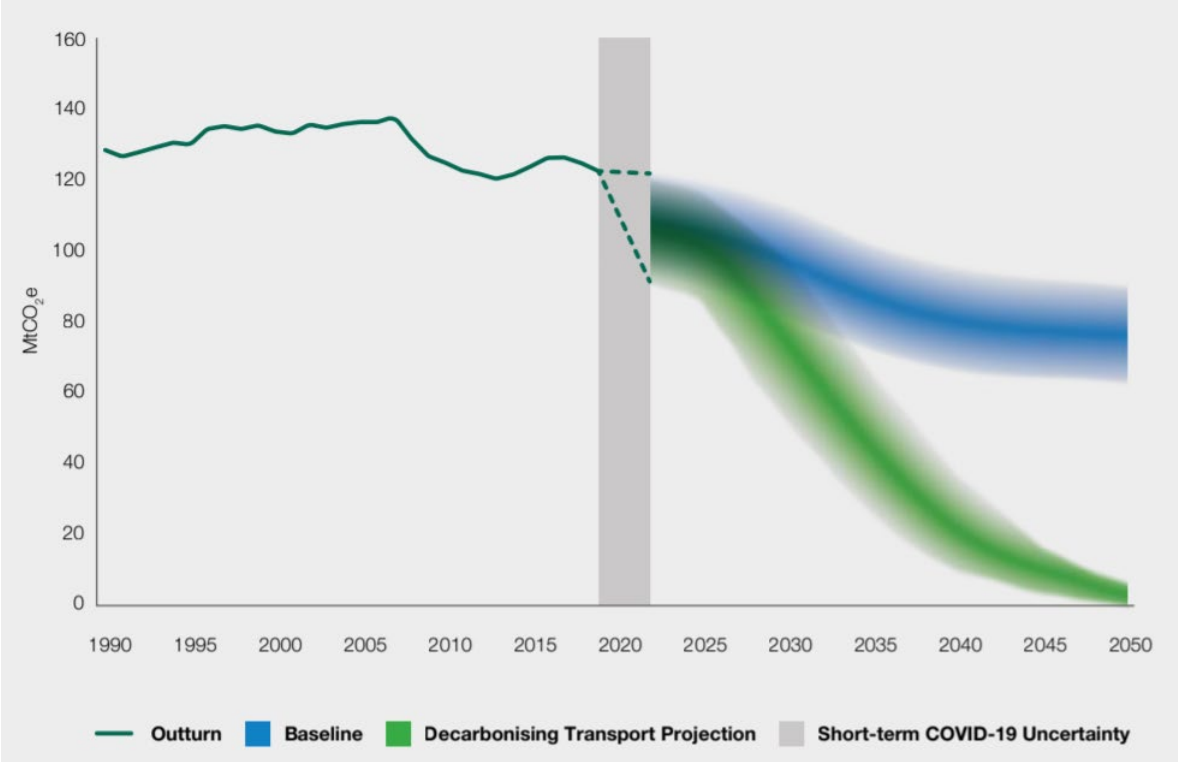


Figure 2: Decarbonising Transport Domestic and International Transport Greenhouse Gas Emissions Projections, versus baseline (DfT: Decarboning Transport: A Better. Greener Britain, 2021)

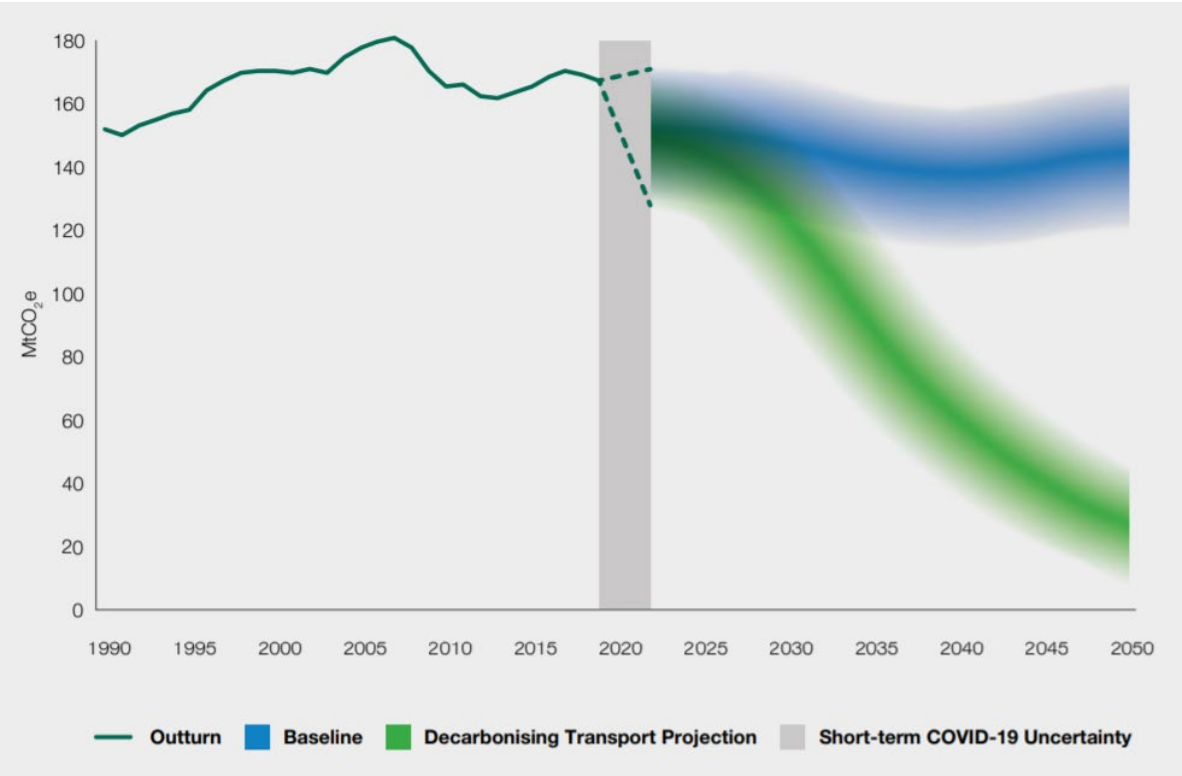
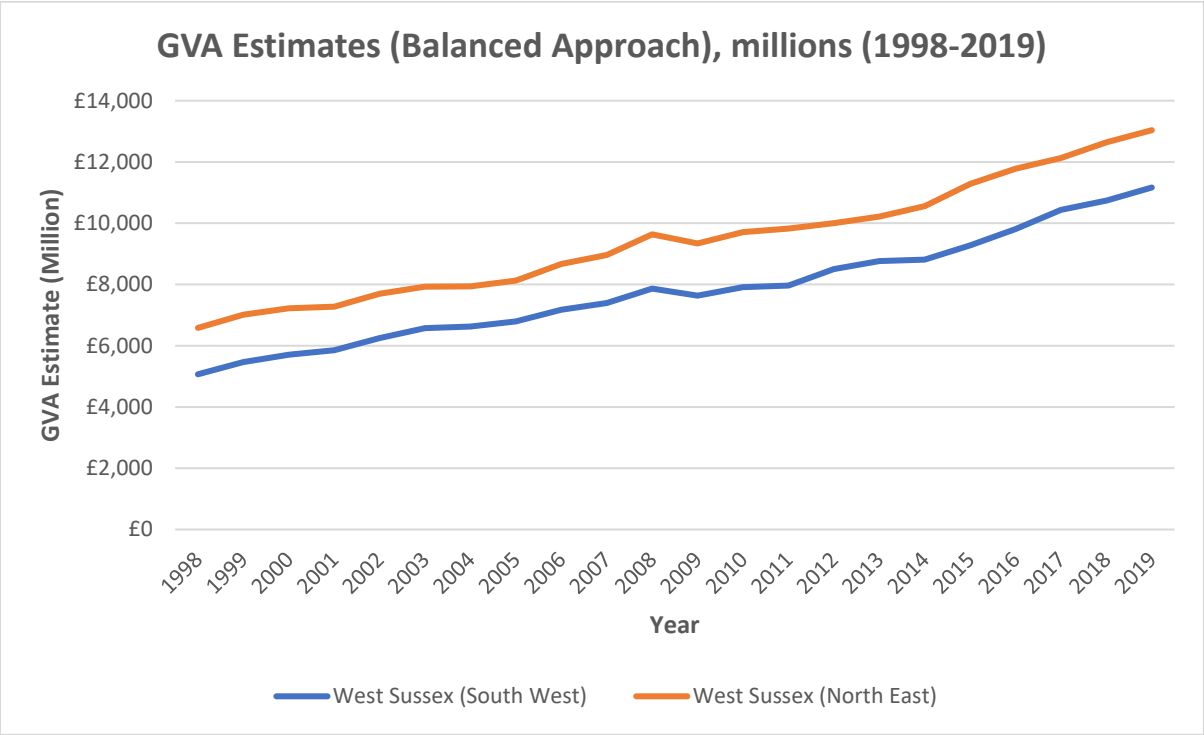


Table 1: Conservation areas within West Sussex

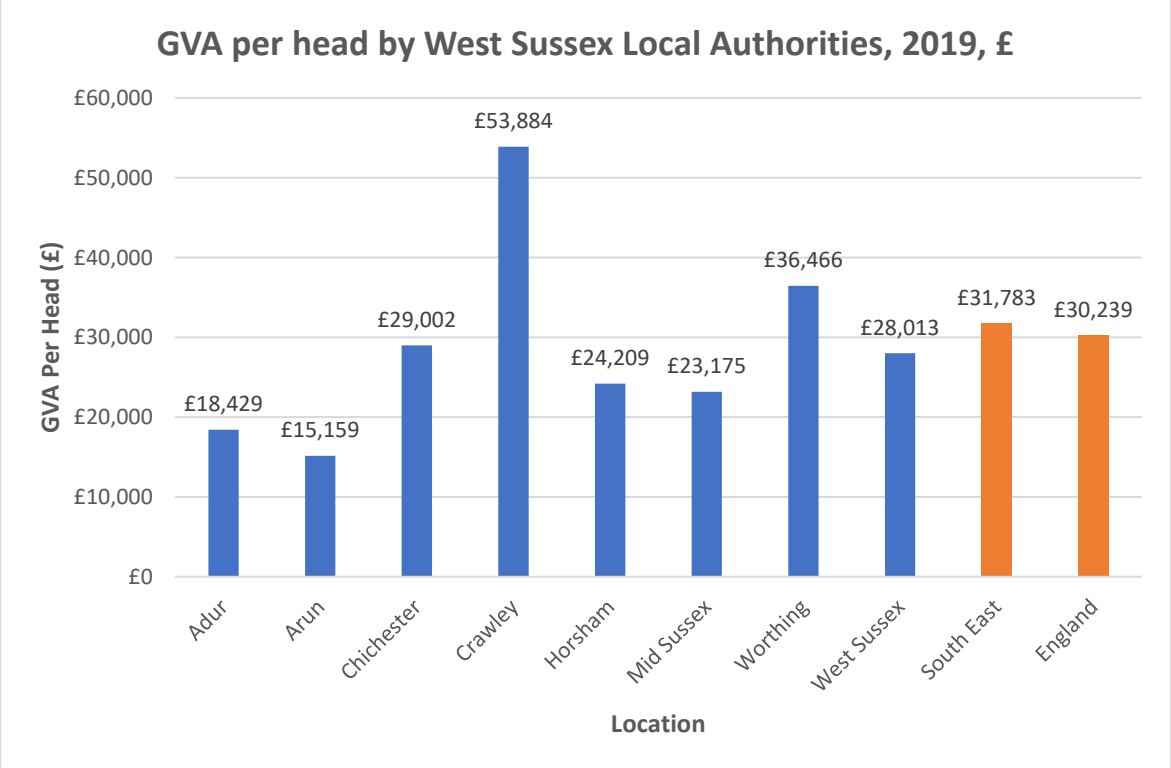
Local Plan Area	Number of conservation areas
Adur	7
Arun	33
Chichester	85
Crawley	11
Horsham	37
Mid Sussex	36
South Downs National Park	166 (across SDNP which extends beyond West Sussex)
Worthing	26

Figure 3: GVA in West Sussex (income approach)



Source: [ONS West Sussex Gross Value Added (Balanced Approach) at current basic prices]

Figure 4: GVA per head by West Sussex local authorities



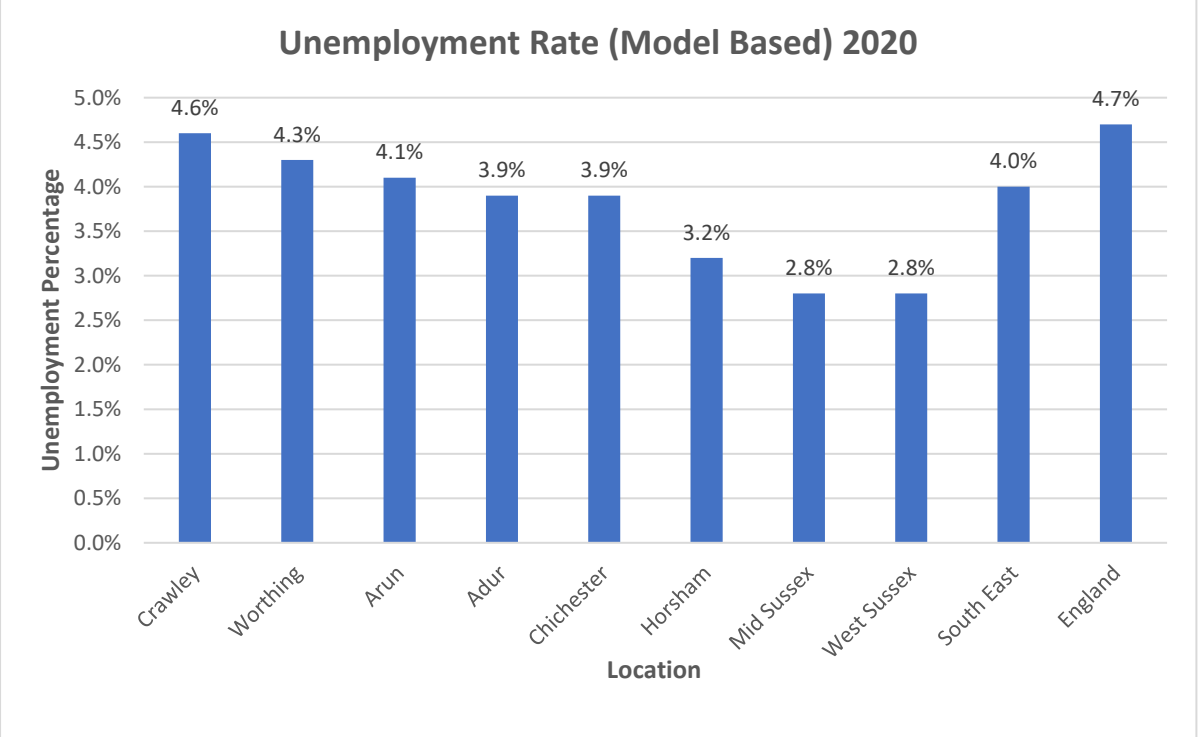
Source: The data in this figure has been estimated at the District and Borough level from various ONS data sources by the WSCC Place Services Performance Management Team

Table 2: West Sussex economic activity and employment rates 2020

Location	% Economic activity rate - aged 16-64	% Employment rate - aged 16-64	% aged 16-64 who are self employed
Adur	87.2	84.9	12.6
Arun	80.4	78.6	6.3
Chichester	74.9	74.0	15.6
Crawley	84.7	81.5	7.3
Horsham	81.4	78.7	13.7
Mid Sussex	84.4	81.7	9.0
Worthing	83.0	80.8	13.5
West Sussex	82.0	79.7	10.9
South East	81.6	78.3	10.7
England	79.5	75.7	10.1

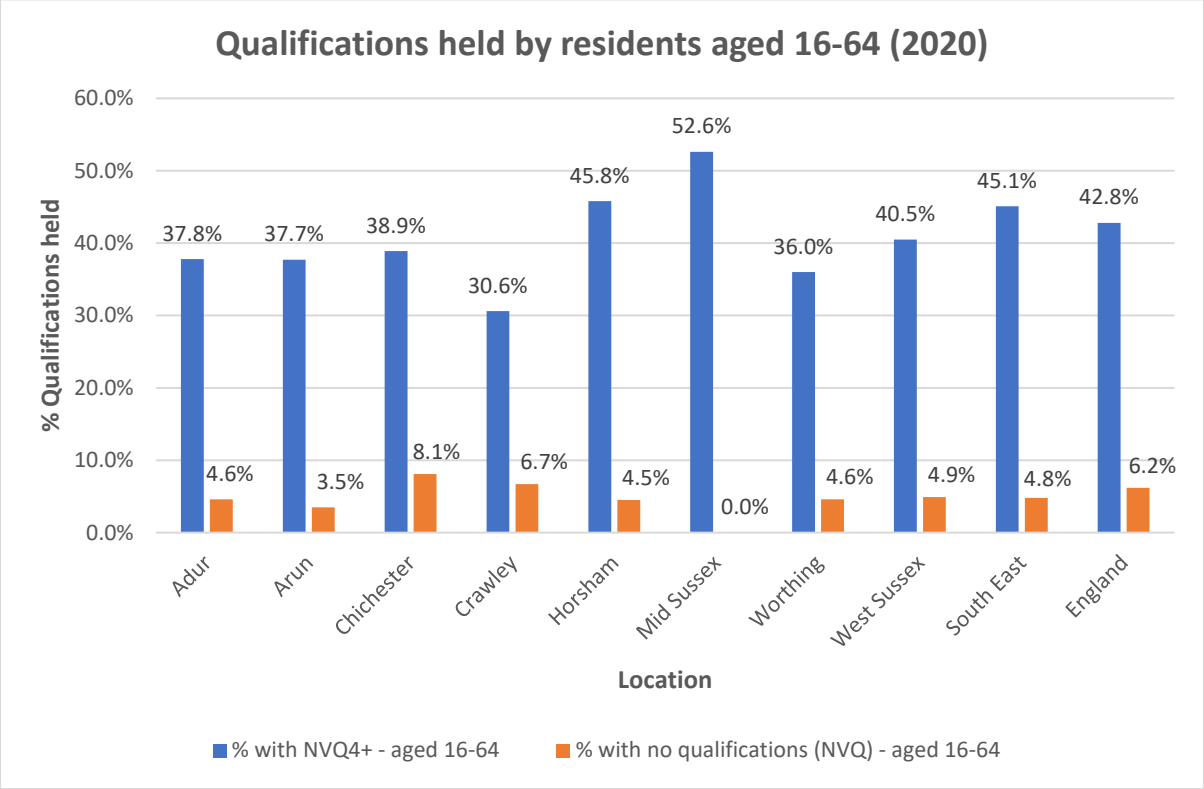
Source: ONS Annual Population Survey (data extract from West Sussex Life – A Prosperous Place report accessed Mar 2022) Jan 2020 – Dec 2020

Figure 5: Model based unemployment rates for West Sussex (Jan 2020-Dec 2020)



Source: ONS Nomis web data accessed Nov 2021

Figure 6: Qualifications held by residents aged 16-64 across West Sussex 2020



Source: ONS Nomis web data accessed Nov 2021

Table 3: Occupational breakdown by West Sussex Local Authorities, 2020 (% of total occupations – resident-based data)

Occupations	Adur	Arun	Chichester	Crawley	Horsham	Mid Sussex	Worthing	West Sussex	South East	England
Managers, directors and senior officials (%)	8.9	8.8	22.2	9.4	15.9	16.7	18.1	14.5	12.6	11.7
Professional occupations (%)	28.4	21.4	16.8	NA	24.2	25.6	11.3	18.4	23.9	22.7
Associate prof & tech occupations (%)	14	15.3	11.8	24.6	17.2	14.5	20.2	16.9	16.6	15.7
Administrative & secretarial (%)	11.5	14.3	10.4	18.8	14.2	7.3	5.7	11.8	10.6	10.1
Skilled trades (%)	14.1	10.1	11.4	10.8	6.1	9.9	9.3	9.9	8.8	9.1
Caring, leisure & service (%)	7.7	8.4	12.7	15.1	6.5	13.1	12	10.9	8.9	8.8
Sales and customer service (%)	10.2	4.7	9.5	7	3.3	7.1	13.1	7.4	6.1	6.8
Process, plant & machine operatives (%)	NA	8.6	NA	NA	6.1	NA	3.6	3.3	4.2	5.6
Elementary occupations (%)	NA	8.4	5.2	10.2	6.6	5.1	6.8	6.7	8	9.3

Source: ONS Nomis web data accessed Nov 2021

Table 4: Business sectors by West Sussex Local Authorities, 2020 (% of total businesses)

Industry	Adur	Arun	Chichester	Crawley	Horsham	Mid Sussex	Worthing	West Sussex	South East	England
Accommodation & food services	6.0%	7.3%	6.2%	7.2%	4.5%	4.8%	7.3%	5.9%	5.7%	6.4%
Agriculture, forestry & fishing	0.9%	2.5%	7.0%	0.2%	5.2%	2.8%	0.2%	3.3%	2.5%	3.7%
Arts, entertainment, recreation & other services	6.6%	6.8%	7.0%	5.4%	6.5%	6.6%	7.6%	6.6%	6.3%	6.4%
Business administration & support services	7.3%	7.8%	8.3%	11.3%	9.2%	9.5%	8.4%	8.9%	8.8%	8.8%
Construction	17.8%	14.9%	11.7%	10.2%	11.8%	12.6%	13.1%	12.7%	12.3%	11.4%
Education	2.6%	2.0%	2.3%	2.6%	2.3%	2.7%	2.2%	2.4%	2.4%	2.3%
Financial & insurance	2.4%	1.5%	1.8%	2.8%	2.4%	2.7%	2.3%	2.3%	2.2%	2.5%
Health	4.9%	6.2%	4.0%	4.4%	3.9%	4.9%	7.5%	5.0%	4.8%	5.0%
Information & communication	7.7%	5.5%	5.8%	8.3%	8.6%	9.8%	9.0%	7.8%	9.8%	7.8%
Manufacturing	6.4%	6.0%	4.9%	4.0%	5.0%	3.8%	4.0%	4.8%	4.1%	4.6%
Mining, quarrying & utilities	0.9%	0.5%	0.5%	1.4%	0.6%	0.5%	0.4%	0.6%	0.5%	0.6%
Motor trades	3.4%	3.2%	2.8%	3.0%	3.0%	2.2%	2.2%	2.8%	2.7%	2.7%
Professional, scientific & technical	13.5%	14.0%	17.7%	12.8%	19.3%	19.4%	15.2%	16.7%	17.5%	15.8%
Property	2.6%	3.8%	4.4%	2.4%	3.5%	3.5%	3.5%	3.5%	3.4%	3.7%
Public administration & defence	0.4%	0.7%	0.9%	0.7%	0.5%	0.4%	0.7%	0.6%	0.6%	0.7%
Retail	9.2%	10.0%	8.8%	9.9%	7.2%	8.1%	10.6%	8.9%	9.3%	9.5%
Transport & storage (inc postal)	3.4%	3.5%	2.1%	8.7%	2.6%	2.0%	2.3%	3.2%	3.6%	4.5%
Wholesale	4.3%	3.6%	3.9%	4.6%	4.1%	3.9%	3.4%	3.9%	3.6%	3.8%

Source: ONS Nomis web data Business Count – Local Units by Industry and Employment Size Band (accessed Mar 2022)

Table 5: Employment sectors by West Sussex Local Authorities, 2020 (% of employees)

Industry	Adur	Arun	Chichester	Crawley	Horsham	Mid Sussex	Worthing	West Sussex	South East	England
Agriculture, forestry & fishing (A)	0.8	1.5	4.2	0.1	2.2	0.8	0.3	1.3	0.9	0.7
Mining, quarrying & utilities (B, D and E)	1.1	1.1	0.2	1.1	1.2	0.8	2.1	1.1	1.2	1.2
Manufacturing (C)	10.7	7.4	10.0	7.6	7.1	5.2	6.4	7.4	6.3	7.7
Construction (F)	7.1	6.4	5.0	3.3	7.1	6.0	3.2	5.0	5.8	4.7
Motor trades (Part G)	2.9	2.1	1.5	1.6	2.2	1.7	1.3	1.8	1.9	1.8
Wholesale (Part G)	4.8	2.7	2.9	2.7	5.4	5.2	1.9	3.7	4.2	3.9
Retail (Part G)	11.9	14.9	10.0	8.7	8.9	10.3	10.6	10.3	9.2	9.3
Transport & storage (inc postal) (H)	2.4	3.7	1.5	26.1	2.7	3.0	1.7	8.2	4.6	5.2
Accommodation & food services (I)	7.1	12.8	10.0	6.5	7.1	7.8	6.4	7.9	7.2	7.1
Information & communication (J)	6.0	1.9	2.9	2.7	5.4	3.9	2.7	3.4	6.1	4.6
Financial & insurance (K)	2.9	0.9	2.9	3.3	3.1	5.2	3.7	3.2	3.0	3.5
Property (L)	1.0	1.5	2.9	0.5	2.7	1.7	1.9	1.8	1.8	1.8
Professional, scientific & technical (M)	7.1	6.4	7.5	5.4	8.9	8.6	5.3	6.8	8.8	9.0
Business administration & support services (N)	6.0	7.4	6.7	15.2	8.9	6.9	5.3	8.9	8.0	8.9
Public administration & defence (O)	1.9	3.2	4.2	2.4	1.4	1.6	4.8	2.9	3.3	4.2
Education (P)	10.7	7.4	10.0	5.4	8.9	12.1	7.4	8.4	10.2	9.0
Health (Q)	10.7	14.9	13.3	5.4	8.9	13.8	29.8	13.2	12.8	13.2
Arts, entertainment, recreation & other services (R, S, T and U)	4.8	4.8	5.8	1.6	6.2	6.9	4.3	4.7	4.8	4.2

Source: ONS Nomis web data Business Register and Employment Survey (BRES) (accessed Mar 2022)

Table 6: Status of local plans and housing targets in West Sussex as of October 2021

Local Planning Authority	Current and Next Stage	Number of Dwellings and Plan Period
Adur District	Local Plan adopted December 2017 Local Plan Review to commence 2021	A minimum of 3,718 dwellings between 2011 - 2032
	Shoreham Harbour Joint Area Action Plan adopted by ADC, B&HCC & WSCC November 2019	1,450 dwellings between 2011-2031 (970 in Adur and in the Adur Local Plan above, 400 in Brighton and Hove)
Arun District	Local Plan adopted July 2018 Local Plan Review has commenced	A minimum of 20,000 dwellings between 2011-2031
Chichester District	Local Plan adopted July 2015 Site Allocation Development Plan Document adopted January 2019	7,388 dwellings between 2012 – 2029
	Emerging Preferred Approach Local Plan Review Regulation 18 consultation Dec 2018 to Feb 2019; Local Plan Review Consultation (Reg 19) Spring 2022	Consulted on preferred strategy to allocate land for an additional 4,350 new dwellings
Crawley Borough	Local Plan adopted Dec 2015	A minimum of 5,100 dwellings 2015 – 2030
	Emerging Local Plan Review – Regulation 19 Representation Period Jan-March 2020; Jan – June 2021	Proposes a minimum of 5,355 2020-2035 (this would replace the current Local Plan once adopted)
Horsham District	Local Plan adopted Nov 2015	At least 16,000 dwellings between 2011 – 2031
	Emerging Local Plan Review Regulation 18 Consultation February – March 2020 Regulation 19 Consultation late 2021	Consulted on three levels of development; 1000, 1200 or 1400 dwellings per annum
Mid Sussex District	Local Plan adopted April 2018	A minimum of 16,390 dwellings between 2014 – 2031
	Site Allocations Development Plan Document Examination commenced June 2021	The DPD sets out how it will deliver the residual housing need from the Adopted Local Plan
South Downs NPA	Local Plan adopted July 2019	4,750 dwellings for the whole park area 2014 - 2033
Worthing Borough	Core Strategy adopted April 2011	3,200 dwellings 2010 - 2026
	Emerging Local Plan Review Regulation 18 Consultation Oct/Dec 2018 Reg 19 Consultation Jan-March 2021; Submitted for examination – June 2021; Currently at Examination	

Table 7: West Sussex 2018-based subnational population projections

Age group	2018	2043	% change
0-4	46,821	47,196	0.8%
5-9	52,172	48,777	-6.5%
10-14	48,804	49,298	1.0%
15-19	43,519	46,755	7.4%
20-24	39,390	37,973	-3.6%
25-29	44,516	46,198	3.8%
30-34	47,817	52,173	9.1%
35-39	53,393	52,491	-1.7%
40-44	52,309	52,347	0.1%
45-49	60,344	58,045	-3.8%
50-54	63,834	61,325	-3.9%
55-59	58,798	62,002	5.4%
60-64	51,612	64,458	24.9%
65-69	50,164	60,692	21.0%
70-74	51,984	65,655	26.3%
75-79	35,836	63,852	78.2%
80-84	27,832	50,390	81.1%
85-89	18,620	32,369	73.8%
90+	11,087	21,940	97.9%
0-14	147,797	145,271	-1.7%
15-64	515,532	533,768	3.5%
65+	195,523	294,897	50.8%
All ages	858,852	973,936	13.4%

Source: ONS, 2018-based subnational principal population projections for local authorities and higher administrative areas in England

Table 8: Average Minimum Travel Time to Reach Key Services by Car 2017

Region	Places with 100-499 jobs	Places with 500-4999 jobs	Places with 5000+ jobs	Primary school	Secondary school	Further Education	GP	Hospital	Food store	Town Centres	Average of 8 services
North East	7.4	8.7	16.9	7.6	10.6	11.9	8.6	17.6	7.2	12.6	10.6
North West	7.3	8.1	15.2	7.4	10.1	12.2	8.3	17.3	7.2	11.5	10.3
Yorkshire & Humber	7.5	8.5	16.8	7.6	10.5	11.7	8.6	18.4	7.3	12.9	10.7
East Midlands	7.8	8.5	18.4	7.7	11.0	12.3	8.9	21.7	7.5	13.2	11.3
West Midlands	7.6	8.4	15.2	7.7	10.3	11.4	8.4	19.1	7.4	12.0	10.6
East	8.0	8.7	19.8	7.9	11.0	12.3	9.0	22.1	7.6	13.1	11.5
London	6.9	7.5	14.3	7.4	9.2	9.5	7.5	16.1	7.0	10.2	9.3
South East	7.7	8.3	19.0	7.9	11.1	12.5	8.9	22.2	7.5	12.2	11.3
South West	8.3	8.8	21.5	7.9	11.7	13.2	9.4	22.2	7.7	12.8	11.7

Source: DfT Table JTS05

Table 9: Average Minimum Travel Time to Reach Key Services by Cycle 2017

Region	Places with 100-499 jobs	Places with 500-4999 jobs	Places with 5000+ jobs	Primary school	Secondary school	Further Education	GP	Hospital	Food store	Town Centres	Average of 8 services
North East	8.7	11.5	32.2	8.7	14.9	18.1	11.2	31.3	8.5	19.7	15.5
North West	8.4	9.8	24.9	8.3	13.0	17.1	10.2	27.1	8.3	15.7	13.7
Yorkshire & Humber	8.9	10.8	29.8	8.7	14.3	16.9	11.2	30.8	8.9	19.7	15.1
East Midlands	9.8	11.1	35.8	8.9	15.9	19.1	12.0	41.7	9.4	20.7	17.3
West Midlands	9.1	10.6	26.1	8.9	13.7	16.1	10.7	33.3	8.9	17.1	14.9
East	9.9	11.4	41.5	9.2	16.0	19.1	12.2	45.6	9.6	20.4	17.9
London	7.1	7.8	16.7	7.7	9.9	10.3	7.8	19.0	7.3	11.0	10.1
South East	9.3	10.3	35.7	9.2	15.4	18.9	11.6	38.9	9.0	17.6	16.4
South West	10.6	11.7	45.3	9.4	17.4	21.7	13.0	43.9	9.7	20.0	18.4

Source: DfT Table JTS05

Table 10: Average Minimum Travel Time to Reach Key Services by Public Transport and Walking 2017

Region	Places with 100-499 jobs	Places with 500-4999 jobs	Places with 5000+ jobs	Primary school	Secondary school	Further Education	GP	Hospital	Food store	Town Centres	Average of 8 services
North East	8.8	13.1	31.6	8.8	17.9	21.2	12.8	34.0	8.1	21.5	17.2
North West	8.6	11.6	29.4	8.5	17.0	21.9	12.1	34.5	8.4	19.1	16.6
Yorkshire & Humber	9.4	12.6	31.6	9.2	18.6	21.5	13.4	36.7	9.0	22.7	18.0
East Midlands	10.7	12.9	36.2	9.5	19.8	23.1	14.2	45.0	9.7	23.1	19.7
West Midlands	9.9	12.9	29.7	9.6	18.4	21.0	13.1	39.8	9.5	21.0	18.2
East	11.0	13.8	38.2	10.2	20.6	23.7	15.0	47.1	10.2	23.7	20.5
London	5.7	7.8	22.4	7.1	12.6	13.4	7.8	27.1	6.3	14.1	12.0
South East	10.0	12.3	34.2	10.3	20.3	23.5	14.2	43.2	9.4	21.0	19.3
South West	12.5	14.3	42.0	10.9	22.5	26.2	16.2	46.3	10.7	23.6	21.3

Source: DfT Accessibility Statistics Table JTS05

Figure 7: West Sussex Public Transport & Walking Access to Main Service Centres, Mon 7-9am within 60 mins (Jan 2016)

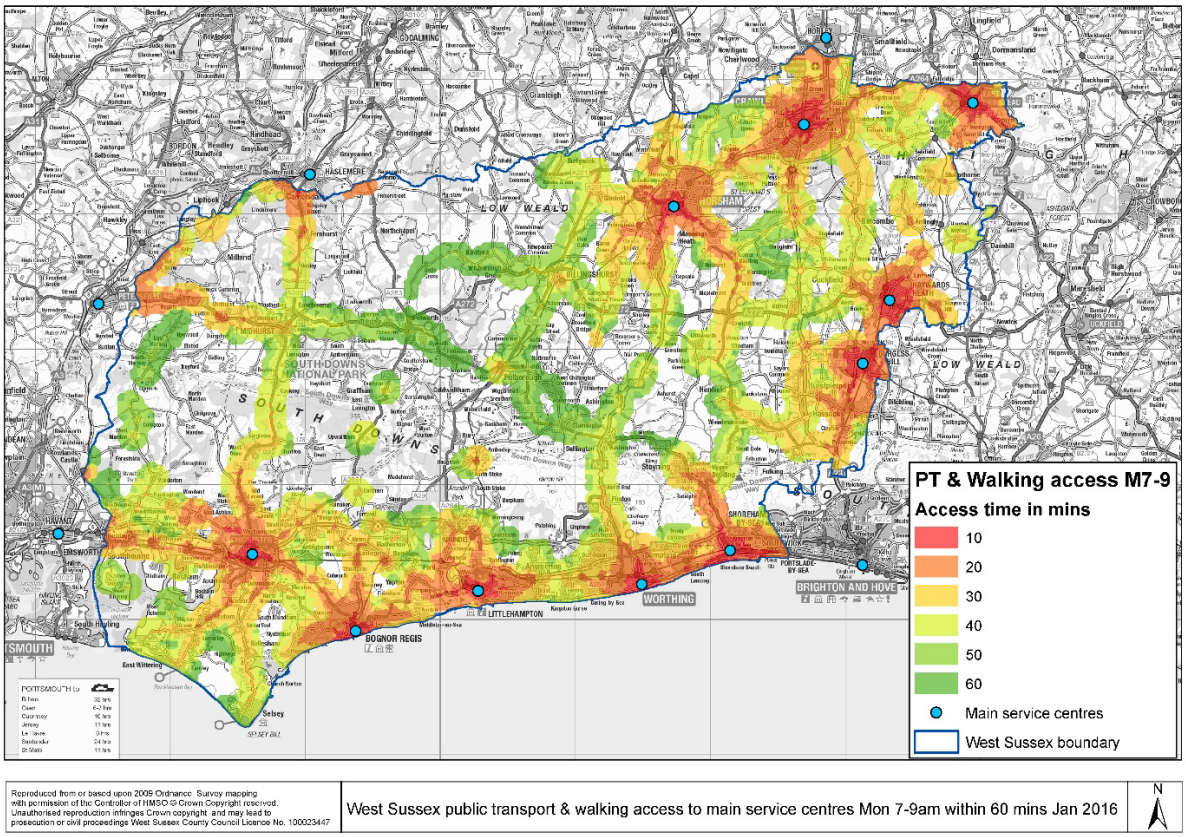


Figure 8: West Sussex County Strategic Road Network

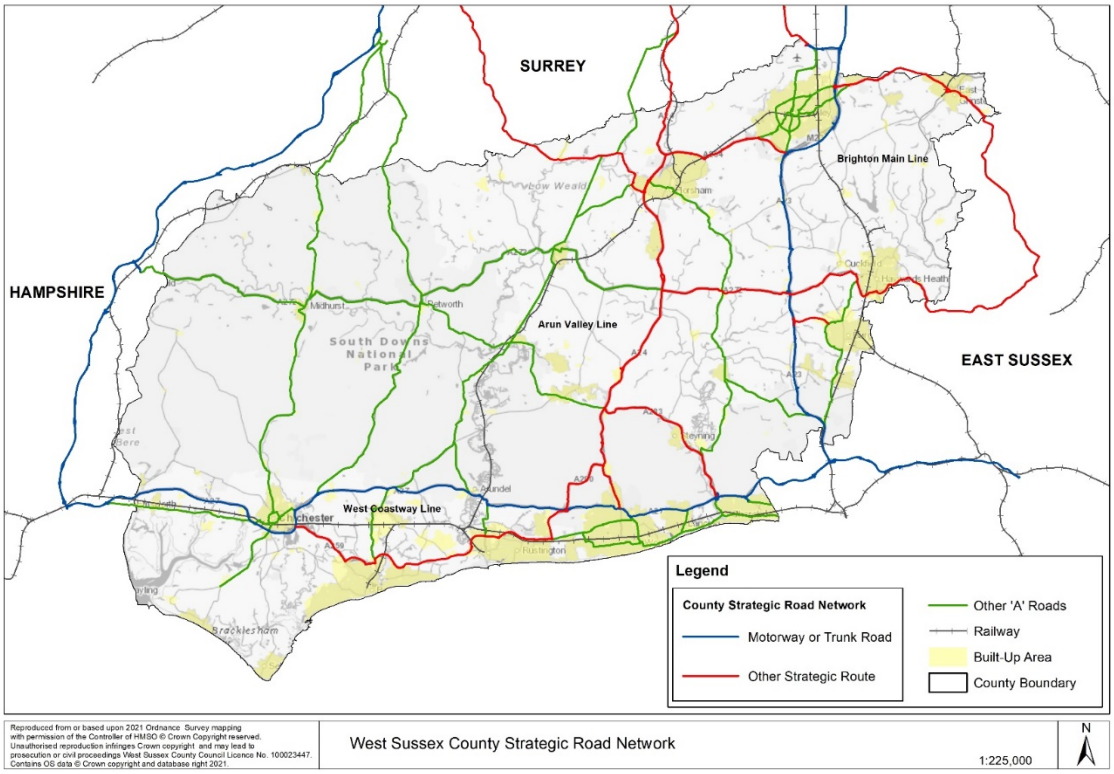


Figure 9: West Sussex Primary Route Network

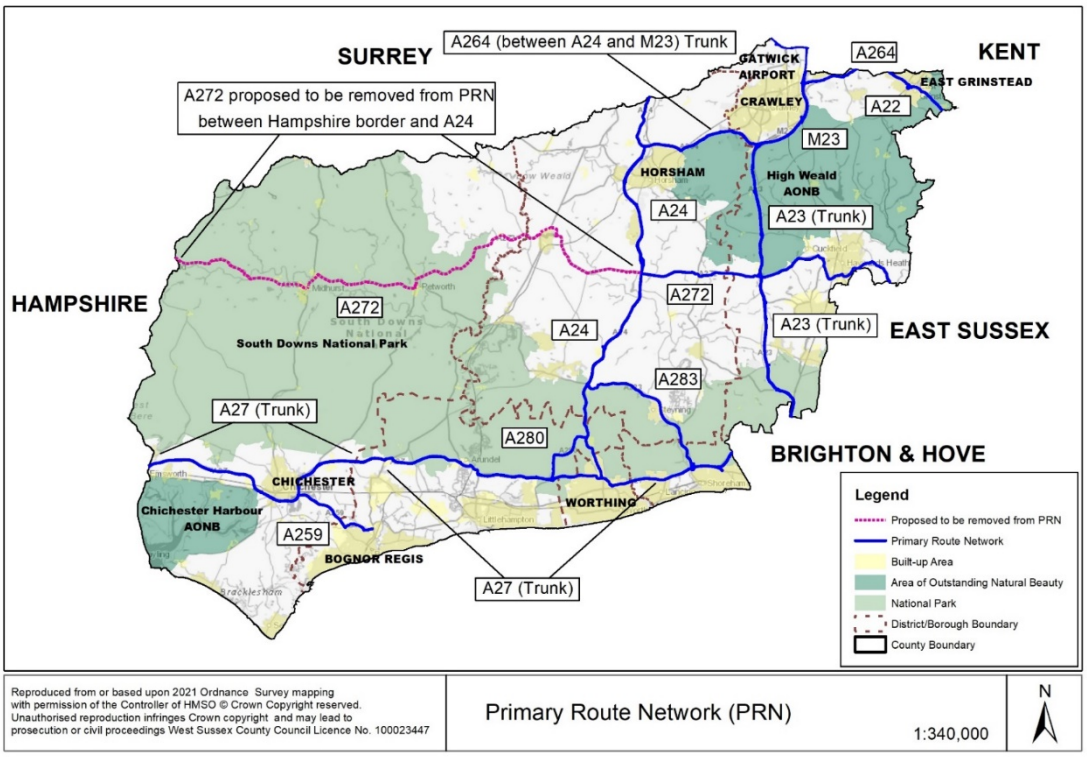


Figure 10: West Sussex Major Road Network

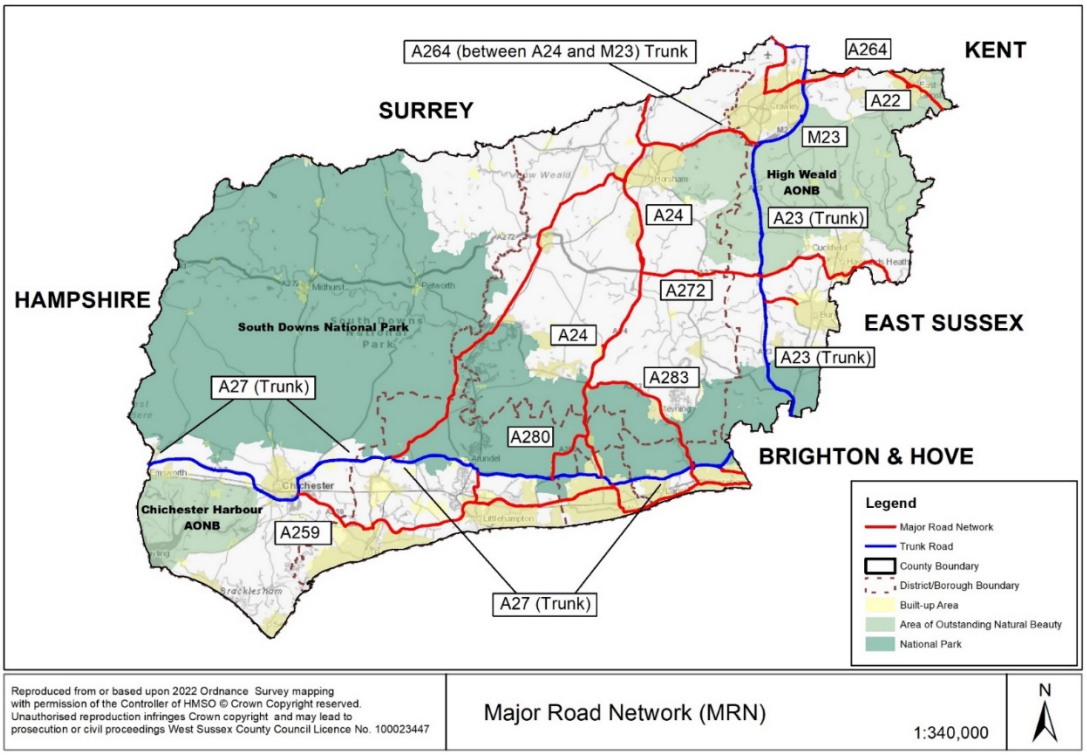


Figure 11: West Sussex Lorry Route Network

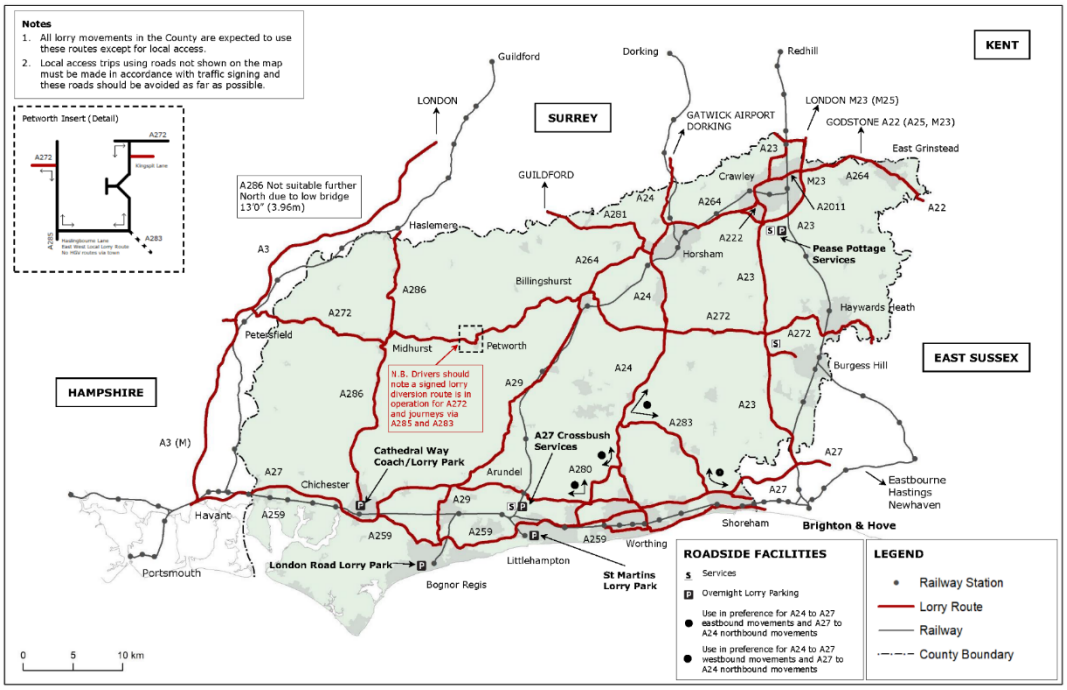


Table 11: West Sussex Traffic Monitoring

Screenline/cordon	2010 index	2019 index	2020 index	Index difference 2010-2019	Index difference 2019-2020
Crawley	107	120	82	13	-38
Horsham	122	128	96	6	-32
Billingshurst	112	118	89	6	-29
Hampshire	127	141	100	14	-41
South Downs	111	119	92	8	-27
Bognor Regis	117	139	105	22	-34
Chichester	130	145	106	15	-39
Worthing	112	122	108	10	-14
Arundel	124	127	100	3	-27
Northwest	103	103	76	0	-27

Source: WSCC Long Term Traffic Monitoring Data

Table 12: Average delay on locally managed 'A' roads 2015-2019

Country/region/local authority	2015	2016	2017	2018	2019	2020
ENGLAND	44.6	45.9	46.9	47.3	44.0	35.3
SOUTH EAST	35.4	36.6	37.5	37.6	35.1	27.0
West Sussex	27.2	27.7	29.8	29.8	27.9	22.3

Note: based on Teletrac Navman data

Source: DfT Road Congestion Statistics Table CGN0502b

Table 13: Average delay on local 'A' roads (seconds per mile)

Local Authority	2021
England	46.1
South East	37.7
Brighton and Hove	107.3
East Sussex	36.9
Hampshire	27.2
Surrey	40.2
West Sussex	33.6

Note 1: based on Ctrack Inrix data

Note 2: Although Table 13 presents the same information as Table 12, there was a methodology and supplier change between 2020 and 2021 so the data is presented separately, and caution should be exercised in making direct comparisons between the two datasets

Source: DfT Road Congestion Statistics Table CGN0504d

Table 14: A Road AM peak performance 2013-18 combined directions

Road	Average AM peak speed (KpH)	Free Flow speed (KpH)	Time (s)	Free Flow time (s)	Delay time (s)	Delay as % of AM peak time	Delay as % of Free Flow time	Delay per Km (s)
A22	36	50	687	494	193	28%	39%	28
A23	58	63	2748	2530	218	8%	9%	5
A24	55	63	2781	2450	332	12%	14%	8
A27	54	66	4004	3291	713	18%	22%	12
A29	51	62	3076	2555	521	17%	20%	12
A259	40	50	6034	4863	1171	19%	24%	17
A264	48	57	2116	1808	308	15%	17%	11
A270	41	48	198	168	29	15%	17%	13
A272	52	60	5007	4371	636	13%	15%	9
A273	42	58	1341	956	385	29%	40%	25
A280	52	61	636	536	99	16%	18%	11
A281	46	56	1838	1538	300	16%	19%	13
A283	54	63	2832	2446	387	14%	16%	9
A284	49	58	334	284	50	15%	18%	11
A285	52	60	1333	1149	184	14%	16%	10
A286	47	55	3226	2773	453	14%	16%	11
A287	37	46	113	93	20	18%	22%	17
A2004	32	46	449	309	140	31%	45%	35
A2011	44	55	248	199	49	20%	25%	16
A2025	27	45	247	149	99	40%	66%	53
A2031	30	38	439	352	87	20%	25%	24
A2032	30	49	506	317	188	37%	59%	44

Road	Average AM peak speed (KpH)	Free Flow speed (KpH)	Time (s)	Free Flow time (s)	Delay time (s)	Delay as % of AM peak time	Delay as % of Free Flow time	Delay per Km (s)
A2037	66	77	70	60	10	14%	16%	8
A2219	30	37	365	291	74	20%	26%	25
A2220	33	44	1024	766	257	25%	34%	27
A2300	44	51	273	232	41	15%	18%	12
M23	80	72	704	782	-78	-11%	-10%	-5

Source: WSCC Highway Analyst

Table 15: Capacity Pinchpoint Locations

Road	Route Category	Delay Locations
A22	Urban	Felbridge to/from East Grinstead, East Grinstead north of town centre
A23	Rural / urban	Crawley Avenue approach to Cheals junction, Pease Pottage northbound slip-road, Brighton Rd northbound
A24	Rural / urban	Washington junction, Horsham (Robin Hood to Great Daux junctions), Buck Barn junction
A27	Rural / urban	Chichester, Arundel, Worthing & Lancing
A29	Rural / urban	Woodgate level crossing, Billingshurst to Five Oaks, Pulborough swan corner
A259	Rural / urban	Worthing to Shoreham, Middleton to Littlehampton, A27 Fishbourne junction, A27 Bognor junction
A264	Rural / urban	Felbridge, Approaching M23 (J10 westbound /J11 eastbound), south west of Broadbridge Heath
A270	Urban	Approaching Kingston Lane (Kingston by Sea, Shoreham)
A272	Rural / urban	Cuckfield - Haywards Heath, Cowfold approaching A281, Buck Barn approaching A24, Midhurst, North St / A286
A273	Rural / urban	Hassocks approaching Stonepound junction North west of Burgess Hill
A280	Rural	Findon approaching A24 Angmering approaching A259
A281	Rural / urban	Horsham Town Centre Cowfold approaching A272
A283	Rural / urban	Storrington, Washington approaching A24 eastbound, Shoreham approaching A259
A284	Rural / urban	Crossbush approaching A27 Wick, including A259 and level crossing approaches
A285	Rural	Chichester - Portfield to City Centre
A286	Rural / urban	Stockbridge - Chichester centre (includes A27 and level crossing approaches), Midhurst / A272, Chichester Northgate
A287*	Rural	* Note: Route is in Surrey approaching County boundary at Camelsdale
A2004	Urban	Southgate Avenue & College Rd, Crawley
A2011	Urban	Approaching Hazelwick junction, A2004
A2025	Urban	Approaching A27, North Lancing, A259, South Lancing
A2031	Urban	Teville Rd approaching A24 West Worthing level crossing Approaching A2032 & A27
A2032	Urban	Durrington - Broadwater, includes A27 approach & A2031 junction
A2037	Rural	Minor only: approaching A283 Upper Beeding

Road	Route Category	Delay Locations
A2219	Urban	Approaching level crossing & High St, Crawley
A2220	Rural / urban	Bewbush - A23 Cheals junction, Three Bridges, Crawley Town Centre
A2300	Rural	Approaching A273 west of Burgess Hill

Source: WSCC

Table 16: Annual West Sussex Road Casualties by Severity 2008-2020

Year	Fatally Injured	Seriously Injured	Slightly Injured	Fatally or Seriously Injured	Total
2020	23	482	1482	505	1987
2019	24	553	2069	577	2646
2018	20	463	2050	483	2533
2017	24	455	2055	479	2534
2016	28	455	2148	483	2631
2015	19	439	2286	458	2744
2014	21	461	2226	482	2748
2013	30	407	2117	439	2554
2012	25	396	1976	421	2397
2011	33	422	2048	455	2503
2010	27	347	2009	374	2382
2009	39	412	2289	451	2740
2008	34	451	2371	485	2856

Note: Due to changes to the Police recording methodology in 2019, data from 2019 should not be directly compared with data collected before or after 2019

Source: WSCC

Table 17: People Killed or Seriously Injured Per Billion Vehicle Miles Travelled in West Sussex

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Milestone	n/a	n/a	n/a	n/a	n/a	112	107	102	98	94	89	86	82	78	75	75
Outturn	104	105	103	104	117	127										

Note: Following Sussex Police's transfer to the national CRaSH database in 2019 and to enable comparison with later years, the base data used is based on the DfT's RAS41003 'Adjusted' Data. Subsequent annual accuracy adjustments for 2015 to 2019 data made by the DfT to the RAS41003 data are shown above and will differ from their 2019 published base data.

Source: WSCC

Table 18: People Killed or Seriously Injured by Mode of Transport in West Sussex 2010-2020

Year	Pedestrians	Pedal Cyclists	Motorcycles	Cars/Taxi/Minibus	Bus	Goods	Other
2020	71	111	96	199	2	20	6
2019	78	88	119	267	6	16	3
2018	81	91	110	187	1	9	4
2017	62	87	110	203	1	10	6
2016	61	81	107	217	3	9	5
2015	73	79	97	186	3	16	5
2014	74	96	106	197	3	5	1
2013	79	76	96	169	3	13	2
2012	71	54	105	172	5	10	3
2011	63	54	125	195	3	12	3
2010	62	45	84	167	2	10	3

Note: Due to changes to the Police recording methodology in 2019, data from 2019 should not be directly compared with data collected before or after 2019

Source: WSCC

Table 19: Children, Young and Older People Killed or Seriously Injured in West Sussex 2010-2020

Year	Child (0-15)	Young persons (13-24)	Older people (70+)
2020	23	103	69
2019	37	115	97
2018	38	102	64
2017	27	121	61
2016	24	108	73
2015	29	119	66
2014	30	115	54
2013	26	116	53
2012	22	106	53
2011	30	121	59
2010	26	104	54
2005/09 average	29	140	51

Note: Due to changes to the Police recording methodology in 2019, data from 2019 should not be directly compared with data collected before or after 2019

Source: WSCC

Table 20: Rail Public Performance Measure Moving Annual Average (period 13)

Operator	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
Southern Mainline and Coast (Govia Thameslink Railway)	89	89	87	86	84	81	70	80	84	87
Gatwick Express (Govia Thameslink Railway)	89	87	84	83	82	76	68	76	67	74

Source: ORR punctuality data at sub-operator level

Table 21: West Sussex Rail Station Entries and Exits

Year	Total entries and exits	Entries and exits (excluding Gatwick Airport)
2010/11	46,285,968	33,157,012
2011/12	49,100,106	34,340,496
2012/13	50,408,610	35,055,554
2013/14	51,925,742	35,740,070
2014/15	53,517,106	36,022,782
2015/16	53,959,734	35,930,888
2016/17	50,501,738	31,140,080
2017/18	53,257,436	32,929,276
2018/19	55,860,834	34,635,588
2019/20	55,686,534	34,635,894
2020/21	11,243,344	9,556,900

Source: Office of Rail and Road Estimates of Station Usage 2010-21 (Table 1415a)

Table 22: Annual Bus Passengers in West Sussex

Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of passengers (m)	25.3	26.6	26.1	26.5	27.3	27.6	27.6	27.2	26.7	24.8	8.6

Source: WSCC based on DfT reported figures

Table 23: National Travel Survey bicycle and motorcycle trips per rider per year 2010-2020 in England

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bicycle (trips)	300	304	321	300	338	343	313	332	333	326	301
Motorcycle (including passengers) (trips)	422	422	413	367	416	360	438	392	335	411	375

Source: DfT National Travel Survey Table NTS0314

Table 24: National Travel Survey bicycle and motorcycle percentage of all trips made by rider in year 2010-2020 in England

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bicycle (%)	24	25	27	25	28	29	26	26	26	27	31
Motorcycle (including passengers) (%)	38	37	36	35	37	35	37	34	25	40	46

Source: DfT National Travel Survey Table NTS0314

Table 25: National Travel Survey bicycle and motorcycle distance per rider per year (miles) 2010-2019 in England

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bicycle (miles)	829	894	1,013	990	1,058	1,028	1,098	1,144	1,104	1,064	1,273
Motorcycle (including passengers) (miles)	4,110	4,268	4,545	3,722	3,779	3,969	4,838	4,383	4,393	3,272	3,004

Source: DfT National Travel Survey Table NTS0314